ON SCENE

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ENS James J. Szrama
Editor

COVER: The Duluth Coast Guard Station and Auxiliary Participate in a joint training exercise. The 44' MLB is in the process of converting a stern tow of a 36' SJV to a side tow. BMCS Gebers gives instruction.

ON SCENE is a quarterly, authorized, special interest publication, produced by the Office of Navigation Safety and Waterway Services for members of the U.S. Coast Guard and the SAR community. Editorial content is not to be considered as authority for official action, nor as record material. Individual views and opinions expressed do not necessarily reflect those of the Department of Transportation or the U. S. Coast Guard.

CHIEF, OFFICE OF NAVIGATION SAFETY
AND WATERWAY SERVICES
UNITED STATES COAST GUARD
WASHINGTON, D.C. 20593-0001

Dear "On Scene" Readers,

In the last issue I discussed communication. This issue I would like to stress **participation.** It is widely accepted that participating in an activity is far more educational then reading about it.

I would like to stress the importance of involvement by Group supervisory personnel during visits of MLB and UTB Standardization Teams. Both Standardization Teams report that participation by Group personnel is, generally, "less than hoped for." Active participation by both Group operations and engineering staff personnel on appropriate days of the visit enhances the benefits of the STAN TEAM concept. It also is an excellent opportunity for the Group to gauge (in a positive manner) the training level and the materiel condition of station boats as compared with others in the class. Unfortunately, that hasn't been the norm.

In the near future, as we transition to the new 47' Motor Lifeboat, involvement and participation at all levels will be paramount if we are to bring this most capable boat into service with a minimum of "learning curve" problems. A new "mind set" is needed. We clearly see that the 47' MLB will not be a vessel that will thrive on neglect or tolerate random CHIEFALTS. Its speed and superior seakeeping greatly enhance our mission capability but will demand sustained materiel and operational readiness.

I view our Standardization Teams as a major contributor toward the harmonization of our operational and maintenance practices in preparation for a new generation of boats. To effect this transition smoothly, active participation by all the players is a necessity.

We, on our part, will continue to emphasize the importance of the Ready for Operations and Standardization programs. Nevertheless, we need your participation.

Sincerely,

W. J. ECKER
Rear Admiral, U.S. Coast Guard

Letters to the Editor

Dear On Scene Editor:

Why is it that just about every issue of On Scene magazine is filled with articles written by headquarters types? Do the people in the Search and Rescue Division have to submit articles? Is it that you won't print what gets submitted from the field? It must be that you guys have a lot of spare time or something. So how about it? I'm sure that the folks out here have interesting searches or rescues to talk about...heck, there's always one or two in each issue of the Commandant's Bulletin, why not one or two in On Scene? Maybe you could even put some SAR case studies in.

BM2 Anonymous
STA New England

Dear BM2 Anonymous

It seems most articles are made by HQ types but there is nothing written down saying they have to contribute to the magazine. That is left up to themselves or their supervisor. I print just about everything I get my grimy little hands on, but if I don't feel comfortable about the applicability of it, or if the deadline is near, then I may either set it aside for the upcoming issue or send it back to the writer if it warrants.

We're always looking for articles and photographs from the field. We actually prefer it that way. (It means that we don't have to churn out as many on our own) We do not have any problems with a phone call to discuss a possible article.

Dear On Scene Editor:

I would like to add to LT Weber's letter in the 3/91 issue of On Scene regarding the accurate determination of distress positions from on shore reporting sources.

Group Honolulu prosecutes a consistent number of flare cases throughout the Hawaiian Islands, our AOR. Determining the positions of these incidents can be difficult; we have, however, combined some simple techniques with the information in Chapter 2 of the Coast Guard Addendum to establish very reasonable incident positions.

In order to determine the most accurate bearing of the flare from the reporting source, their location is first plotted on the appropriate chart, using a local street guide for reference. Once the location of the reporting source is reliably established, a line of position is plotted one of two ways. First, if the reporting source can see O.K. or is located on the shoreline, they are asked to place their shoulders parallel to the beach. They should then be looking straight out to sea, perpendicular to the beach, establishing a solid reference line. Next, the reporting source is asked to give a relative bearing left or right of that reference. This provides a fairly accurate line of position. Second, if the reporting source is not near the shoreline, their street is used as a reference line, and relative bearings are taken from that. Fortunately the majority of our reporting sources are located close to the water and the street guides include accurate depictions of the shoreline.

Once a line (or lines) of position have been established, the watchstander helps the reporting source estimate the distance of the flare using the "fist" method described in Chapter 2 of the Coast Guard Addendum. This takes a lot of patience but produces good results. Determining reliable lines of position and estimated distances reduces much of the guesswork from our flare searches.

Another very helpful tool is the flare search template developed by the SAR School. You might describe it in a future article for the benefit of those who attended SAR School before its use.

QMC J. E. CONNOLLY
GROUP HONOLULU

Dear ON SCENE Editor:

We recently replaced all our motorcycle-type helmets with the new lightweight, white water kayaker helmet. Most comments from the crew have been favorable concerning its light weight and improvement in the wearer's ability to hear other crewmembers speaking and radio transmissions. Some crewmembers have stated that it's not as warm, especially when swimming (liners are being ordered). Yet, it presents less drag while swimming because of all the vent holes. The motorcycle-type acted as a drogue when swimming through surf conditions. A person would actually be dragged through the water by a wave while wearing the motorcycle helmet.

The main concern of a majority of crewmembers is the new helmet's ability to withstand the same impact that the old style helmet withstood. In particular, the helmet against metal while operating in surf and heavy weather conditions in an MLB.

Is there a simple effective impact test that can be done in the field to alleviate some of the apprehension among the crewmembers?

Have there been any good or bad experiences with this helmet?

Also, this unit has been unable to find a boot to meet all the configuration requirements as set forth in the Coast Guard Rescue and Survival Systems Manual yet is comfortable (warm) and safe. Two different brand boots were evaluated which did meet the requirements. Both boots were extremely cold, even with the recommended wool socks, and they were also difficult to remove when filled with water. When the boot has become filled with water a person would have to cut them off in an emergency. The water causes too much suction for them to be removed quickly. This would be life threatening in certain circumstances.

Another boot we are currently evaluating is the "Caribou" made by Sorel in Canada and purchased through a U.S. distributor. The boot does not have a steel toe. The lower half is black rubber with a tan stripe. The upper half is leather and is a natural leather color. The boot is completely insulated with between 3/8" and 1/2" wool insulation. The upper leather half is laced with very large laces. The boot is very warm, comfortable and extremely well received by the crew. The laced upper half makes the boot very easy to remove even in the water.

The trade off is crushed toes for drowning due to water filled, difficult-to-remove boots. Have any other unit come up with something similar (wool insulated, comfortable, waterproof, easy to remove) to the Sorel but with a steel toe?

M. A. Seck
Station Tillamook Bay

Editor's Note:

The Kayakers helmet is not designed nor intended to absorb impact as well as the motorcycle helmet. However, we believe that there is little likelihood of sustaining head impact during heavy weather operations that would equal the blow received by a motorcyclist. Therefore we believe the kayakers helmet offers adequate head protection.

Remember that any helmet must be buckled before it is guaranteed to work. In recent MLB rollovers, helmets were lost overboard when crewmen neglected to buckle them up.

About Letters to the Editor:

ON SCENE seek letters to the editor and will gladly publish them. Some rules do apply though.

1) The authors name, address, and telephone number must accompany letter.

2) If requested, the authors name will be withheld, but nameless letters will not be considered.

3) ON SCENE has the right to edit all letters for taste, grammar, and length.

OUTBOARD MOTORS AND THE COAST GUARD MISSION

By: BMC T. C. Doucette, USCG Station Niagara

The outboard engine has gained wide acceptance throughout the Coast Guard and the marine world in general because it has a lot of desirable features. It has a good power to weight ratio, requires only moderate maintenance, and can be quickly replaced in the event of a failure.

The outboard is not without its limitations, and often times it is unknowingly taken beyond them, which results in burned pistons, broken rings, thrown rods, etc. It shouldn't happen, but lack of training and improper propeller selection have doomed a lot of good engines.

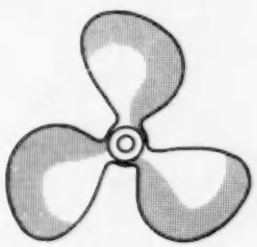
First and foremost, 99 percent of the outboards we use are gasoline burning, water cooled, two stroke-cycle engines. They are lubricated by oil either pre-mixed into the fuel or injected prior to combustion. (OMC calls this VRO). Both systems work well, although oil injection is a bit more efficient (and environmentally friendly).

Unlike their diesel counterparts, the fuel enters the combustion chamber (cylinder) already mixed with air. Here it is compressed by the piston and ignited by a spark plug. This forces the piston down, rotates the crank and eventually the propeller.

When the fuel/air mix is ignited, it burns (not explodes) and this takes time. Since the engines operate at a fairly high RPM, usually 5500 or so at max power, it is necessary to ignite the mix earlier in the combustion cycle at higher speeds. This is accomplished with mechanical spark advance, which advances spark timing as the throttle is opened.

This is where our engines really to take a beating. Most propellers recommended by the manufacturer are for pleasure craft use. In a typical setup, full throttle RPM varies little, as most boaters usually carry the same load and rarely tow other vessels.

Visualize the typical Coast Guard SAR mission, and you will usually see a high speed en route to a case, regardless of the urgency (full power-damn the torpedoes), then a vessel towed slowly back to port, say 2500 RPM. But remember, although the RPM's are down, the throttle setting, load, combustion pressure, heat, and the evil mechanical spark advance are all up. The water pump is turning more slowly, providing less cooling.



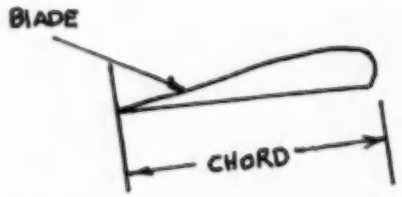
Our engines typically use about 38 degrees or so of full throttle spark advance. This is great if we're turning 5000 RPM, it's devastating at 2500. The flame front in the cylinder is well established long before the piston reaches the top of its run. The pressures produced here are incredible, as the piston compresses the burning fuel air mix. Next time you tear down an outboard and see damaged pistons and such, don't automatically blame the lubrication. Take a look at your propellers and see if they are

matched to your mission.

So okay, you say, not that I'd believe a Boatswain's Mate spouting such nonsense, but how do I select a propeller?

What we want to do is strike a balance between speed, acceleration, power and longevity. As the outboards have only one forward gear ratio, it is propeller and load that regulates our engine RPM per throttle setting.

Propellers come in many of shapes and sizes, but have a few things in common. First, they are described by DIAMETER (D) and PITCH (P), usually expressed as 17D X 15 or just 17X15. D is overall diameter in inches, and P is Pitch in inches, or the theoretical distance the propeller will advance in one rotation through a solid (such as clay). Also significant is number of blades and the CHORD or blade width.



For the sake of this discussion, we will assume that the chord of the blade is the same between propeller sizes, as this vastly simplifies computations. We'll also assume you'll be replacing a 3 blade with a 3 blade or 2 for 2 etc.

A check of your owners manual will show the **FULL THROTTLE OPERATING RANGE** of your particular engine. 4500 to 5500 RPM is quite common. This is critical. Stray from it, above or below, and you'll need a new powerhead. I promise.

Now, note your boat's full throttle (calm water) RPM and compare it to what your engine should have. Now, hitch that boat up to a typical tow, and increase power slowly until 1) you are towing as fast as you can safely, or 2) large movements of the throttle give you little or no RPM gain. Note your top RPM before the throttle becomes largely ineffective.. If you are in your engine's full throttle operating RPM at both light load and under tow, you're all set. I have yet to see this happen.

Typically, you will get something like 5200 light, 2000 with a tow. This is an engine headed for the scrap heap if used for towing, unless this is corrected. The propeller has either too much pitch, too much diameter, or both. It's almost always too much pitch.

What we need to do is increase our towing RPM, without allowing the engine to over rev when running light. We'll do some simple calculations to find a better all around prop.

Generally, a large, low pitch propeller will work better at low speed, while a small, high pitch propeller is better for high speeds. The bigger the blade (D), the greater the size of the discharge stream, and generally, the less slippage.

Check your propeller. Let's say it's a 13 X 17. The overall load a propeller can absorb can be called its POWER FACTOR. This number can help us select props, with about the same load for different uses.

POWER FACTOR = 2D + P

For our example, (2 X 13) + 17 = 43. We want a prop that will increase our towing or loaded RPM but not allow the engine to over rev when running light. We'll reduce (P) and increase (D), while keeping the POWER FACTOR near 43. A prop with 15" of pitch will need a diameter of 14 (2X14+15 = 43). The additional diameter means more THRUST at low speeds, just what we need for towing. 14" of pitch needs a diameter of 14.5 for a power factor of 43.

So, as our 19 year old BM3 COXSWAIN/NINJA says, "what about top end? I feel the need for speed. The throttle is only for mooring. Speed saves lives, fuel is free, etc."

To get a ball park idea of the speed from a particular propeller/engine combination, it just a matter of multiplying prop RPM X pitch, which equals inches per minute, then converting to KNOTS (divide by 1200).

$$\text{Speed in Knots} = \frac{\text{RPM X Pitch}}{1200}$$

Remember we need PROPELLER RPM, not engine RPM, so a quick check of your tech manual

will probably show something like 2.5 to 1 gear ratio. SOOOOO, if our engine RPM is 5200, our prop RPM is 2080. 2080 X 17 = 35360 divide by 1200 to get 29.5 knots. 15" of pitch at the same RPM should give us 26 knots. Still plenty fast for most missions.

With the compromise of about 3.5 knots in this example, we will increase our towing power and decrease engine operating temperature, wear, and failures. The boat will accelerate more quickly, and have more power while maneuvering ahead and astern. Mission time can decrease, with our ability to tow larger vessels faster than with the high-pitch speed props. Repeat the initial tests above to check your light load RPM and towing RPM. Try to get the towing RPM up a bit, and keep the light RPM within reason. The right prop can turn a real dog into a thoroughbred.

If anything, remember: spark advance is tied directly to the throttle. **LOW RPM AND HIGH THROTTLE WILL DESTROY THE POWERHEAD.**

Most Coast Guard outboard powered boats have too small a propeller with too much pitch for towing. If your boat takes a long time to get on step, and doesn't seem to pull very hard, you just might want to check your prop.

EDITOR'S NOTE: ***SOUND ADVICE.*** *From the number of "burned up" engines we hear about we'd say the Coast Guard gets a grade of* **D-** *for matching props to load. Also remember that reducing propeller pitch lets the engine rev higher under no load conditions than is recommended by the manufacturers. So, coxswains, use some wrist restraint and hold it to the red line or below!*

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SARMIS DATA REQUESTS

By: Ms. Sue Holden, G-NRS-1

SAR STATISTICS - Many of you have asked us what the procedures are for getting specific information about your unit from SARMIS. A simple rapidraft or letter signed by the CO or OinC is all you need. The letter, outlining your request in detail, should be directed to Commandant (G-NRS-1). Please include a name and phone number in case there are questions concerning your request. If you are not sure we can provide what you need, give me a call at FTS 267-1089; I can be reached from 7 a.m. to 3:30 p.m. EST. We have Fiscal Years 1980 to 1991 complete and can provide you with density plots illustrating the location of cases in your AOR, show you where lives have been lost and tell you all about your unit's stats.

Please allow a reasonable amount of time for us to respond to your request. Typically, one to two weeks is all that's required. However, don't ask for 50+ density plots with a one week turn-around time. In generating your requests, ask yourself, "Will I really look at all the data I'm asking for?" If you're not sure, and you are uncertain as to how to best depict the data, again please call me for assistance. We would rather spend 15 minutes discussing your specific needs than to have to call and explain that your request is unreasonable.

NOTE: Private citizens seeking SAR information should be directed to forward their requests under the Freedom of Information Act. Procedures for submitting these requests are contained in the Privacy and Freedom of Information Acts Manual (COMDTINST M5260.2).

Boat Crew Professionalism
"Points to Ponder"

By: CWO Rick Schmidt, G-NRS-2

WHO IS BERNIE ?

Bernie is not a real person. In the aviation community it's the generic name for the job aid book that air crews carry while airborne. The information contained in a pilot's "Bernie Book" consisted of Emergency Procedures, Approach Maps, Local Coordinates, and Frequency Information AND ...the list goes on!

Nowadays, the complexities of small boat operations and mission guidance are as great for a coxswain as they are for a pilot. If you carried all the reference material aboard, there would be stability problems among many of the boats you operate. While stationed at Air Station Miami, I saw the "Bernie Book" carried/used all the time. Sorta like, "Ya Don't Leave Home Without It".

What especially caught my attention is how suitable its use could be in the small boat community. It's available through the stock system under the name:

Book, Flight Crew, FSN 7510-00-766-4269, Cost $4.26.

The book has easily removable, ring bound, vinyl sleeved pages and it's a lot more waterproof than the green book/memo pad we have come to rely on in the past. Overall size is 5 by 8 inches. At my last unit, I made a book up for the boarding bag. The coxswains picked up on it and they each made up their own books. Some of the information that they contained is listed below.

1. **Deviation tables for each boat.**
2. **Charts cut up to show areas less frequently visited with courses laid out.**
3. **Charts with shoalwater areas marked to correspond to the deepest draft boat at the unit which would normally operate in that area.**
4. **Stored waypoint information for boats equipped with LORAN C.**
5. **Casualty control procedures: Fire, Flooding, and Grounding.**
6. **Ready For Ops exercise checklist. (Used as a training guide)**
7. **UNDERSTANDABLE instructions for operation of electronics.**
8. **Communications information - (Unclassified only)**
9. **Tide information.**
10. **Etc.**

In both training and operations, the availability of the book and the ability of a coxswain to shape it to individual needs made for a helpful job aid. As a measure of the book's effectiveness, the Boat Crew Review Board at my last unit required prospective coxswains to have a book when they sat for their board.

WORDS OF CAUTION **Use of a job aid such as a"Bernie Book", the old "Green Book", or any other job aid should not cripple you while performing a routine task.**

P.S. Order enough to go around, reserve coxswains included!

Disaster Drill:

A Great Way To Tune Up For SAR Season.

By: LT Jim Bjostad and the crew of CG Station Barnegat Light

One way for a SAR Station to tune-up for the summer SAR season is a disaster drill. Station Barnegat Light has conducted one every spring since 1989 with a great payoff in training, as well as good will in the community. As I depart Station Barnegat after a three year command tour, I wanted to share this idea with the rest of the ashore SAR community. It has been a very important part of our training and readiness.

Located at the northern tip of Long Beach Island, six miles off the coast of central New Jersey, the borough of Barnegat Light is a sleepy fishing village with just 600 residents. For much of the year, not much happens here, although boats of the local fishing fleet occasionally get into trouble in heavy surf in the notorious Barnegat Inlet. Come summer, though, Barnegat Bay between the island and the mainland becomes alive with tourists and boats. From Memorial Day to Labor Day each year, Barnegat Bay and the adjacent Barnegat Inlet are visited by over 40,000 boats, some on a daily basis.

Coast Guard Station Barnegat Light, is home for 33 crewmembers and their families. With five small boats ranging from a 16 foot Boston Whaler to a 44 foot Motor Lifeboat, Station Barnegat Light is staffed and equipped to handle virtually any contingency. The Borough of Barnegat Light has a small but dedicated First Aid Squad, a Volunteer Fire Company, and Dive Rescue Team, all of which are staffed wholly by volunteers. When disaster strikes, it is the people of the town and the crew of Station Barnegat Light who must work together to handle the situation.

During the winter of 1988, shortly after I took command of Station Barnegat Light, I approached the Emergency Management Coordinator of Barnegat Light about a joint Coast Guard and local training exercise. As a result of his enthusiastic response and support, beginning in April, 1989, Station Barnegat Light and the local Borough of Barnegat Light have conducted an annual Community Disaster Drill to exercise the coordination and cooperation necessary to deal with large emergencies. Inevitably, each summer there are several real cases which mirror portions of the disaster drill. As a result of the community drills, the town and the Coast Guard have handled every actual emergency quickly and efficiently.

Every drill begins with a comprehensive safety brief for all participants.

The local Boy Scout Troop, Station Barnegat Light's Sea Explorer Post and other local Explorer Posts assist with the disaster drills, serving as victims, providing gate security and traffic control for

emergency vehicles entering and exiting the station, and "shadowing" Coast Guard personnel to learn about the Coast Guard from a hands-on perspective. This use of the young people in the community gives many their first taste of dealing with emergencies. They are an enthusiastic and willing bunch, and always come away from the drills with increased excitement about Scouting and the Coast Guard. Although we do not use the Sea Explorer program as a recruiting tool, the youth leader of the Sea Explorer Post, Mark Mattson of Forked River, New Jersey, is scheduled to enter Coast Guard boot camp this summer following graduation from high school. We are proud to have him.

The basic scenario for the annual drill involves a 40 foot sport fisherman being struck at high speed by a 20 foot open outboard. Following the collision, there is a large explosion with 10-12 victims injured with at least one victim being "blown" into the water. Although each year one of the "victims" makes the radio call for help, in 1991 we used my 11-year-old son, Ben, to play the part of a terrified child surrounded by injured, unconscious adults. This twist required the radio watchstander to exercise extreme patience and ask specific questions to determine the disaster location.

MK3 John Bucher assesses the condition of a "victim"

The victims were portrayed by Boy Scouts, Explorer Scouts and their adult leaders. Their lively, realistic acting gave the drill a serious flavor as well as providing them with front row seats. Local news reporters and photographers were assigned places on Coast Guard boats and the collision boats to observe and photograph the drill. The photos accompanying this text are provided courtesy of the local weekly newspaper.

As the initial "Mayday" call comes in, the Petty Officer of the Day (POOD) must begin responding even as the watchstander develops more information. The POOD must alert the local police, call for initial First Aid Squad response, call for the fire company dive rescue team, and determine if helo support, whether Coast Guard or State Police, is warranted. As the scenario unfolds, the POOD requests additional resources as necessary and coordinates with the First Aid Squad's On Scene Leader, who remains at the Coast Guard Station, for transport and care of victims.

As the first Coast Guard response boat, a 41 UTB, arrives on scene, a "vision from Hell" awaits them. The worst nightmares of a SAR coxswain all occur at once. Drill monitors inform them that a large fire engulfs the bow of the sport fisherman and the attached speed boat. The 41 rigs for firefighting and beats down the flames as contorted victims littering the deck scream or moan in pain for realism.

Made up by the First Aid Squad in medical moulage to give the appearance of wounds and burns, the victims are a chilling sight to the arriving CG EMT's. As the EMT's board the vessel, they must perform field triage, assessing the severity of each victim and determining whether they are saveable in the context of the overall scene. Some of the victims are horribly burned and cannot speak while others are unconscious.

From the foot of a stretcher, MK3 Jose Monge directs a first aid squad volunteer in the safe transfer of a victim to the waiting 41 UTB.

The Coast Guard EMT's provide First Aid and package the patients for transport back to the unit as additional Coast Guard small boats, crewed by recalled crew members and carrying civilian EMT's, arrive and assist. The initial Coast Guard response boat remains as On Scene Commander(OSC) and relays information to the station as additional boats begin ferrying the patients out. Each patient is evaluated and accompanied by an EMT or escort to Station Barnegat, where the patient's vital signs and condition are relayed to the waiting First Aid Squad.

SA Tim Knotts monitors vital signs of a victim during the transfer back to Station Barnegat Light.

The patient is then transferred to an ambulance for transport to the nearby First Aid Squad building, set up as a MASH-style Advanced Life Support facility. From that building, patients would be transferred on to local hospitals under real conditions. Ambulances then return to the station for more victims, simulating the continual string of ambulances from nearby towns which would be summoned in a real emergency. With the nearest hospital 15 road miles away, effective triage and care is critical to saving the maximum number of patients. Occasionally, the reality of having to "black tag" a victim, no longer considered survivable, is brought chillingly home to the EMT's.

As the medical personnel treat victims, the Fire Department Dive Rescue Team arrives from the fire house and is transported in the 19' Rigid Hull Inflatable Boat to the collision scene. Working under the control of the Coast Guard OSC, who keeps track of which CG boats are in the area and where for safety, the dive team makes the search for the submerged victim. Although submerged victims are a relatively rare occurrence, the wrong time for a dive team to learn to operate from a Coast Guard boat is during a real emergency. These annual drills assure a professional, coordinated rescue operation.

With BMC Rafael Arizmendi at the helm of the RHIB, MKC Rob Wilkins and SN Lisa Verderosa keep an eye on fire company rescue divers searching for a submerged victim.

Safety is the paramount concern during the drill. During a pre-drill briefing, I carefully outlined the scenario for all participants and reminded everyone that they each have the right to call "time-out" if they see something unsafe occurring. The purpose of the drill is to exercise coordinated emergency response, not to impress each other with overenthusiastic zeal. In addition, the Coast Guard Auxiliary provides a 500 yard security zone around the exercise to prevent spectators from getting in the way. In three years, there has never been an injury to any of the more than 200 participants.

Every summer, Station Barnegat Light crews deal with over 300 SAR cases in just three months. As a result of the disaster drills, the station, the first aid squad and the fire company have always worked together as though they were choreographed. Although we have recovered bodies and have had victims later die in the hospital, we have never lost a patient between the site of an emergency and the hospital: a record we are proud of. If they can survive an accident, we can get them to the hospital alive.

The disaster drills generate a great deal of community spirit and pride, and have been an avenue of increased cooperation and friendship between the Coast Guard and the townspeople. Several Station Barnegat Light crew members have become volunteer firemen and first aid squad members, further cementing community relations. The results of a few weeks planning and a two hour drill every spring pay off handsomely in readiness for the real thing as well as community relations and good will.

UPDATE
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UPDATE
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UPDATE...

ON THE 47 FT MOTOR LIFEBOAT

By: The 47FT MLB Test Team

---CWO4 Bill Ham---
----Test Team Manager----

General:

The prototype 47 ft Motor Lifeboat arrived at Cape Disappointment, Washington in September 1990 to begin test and evaluation. Over a year later, the Developmental and Technical testing has been completed. With over 500 operating hours on the boat, most of the defects and the MLB's strengths and weaknesses have been identified. The testing has provided sufficient information to propose over 100 design changes to correct the shortcomings in the prototype's configuration and improve upon its operational capabilities.

Initially, the prototype had problems with its ability to turn at high speed (it heeled in excess of 40 degrees and wouldn't turn until speed dropped off to an unacceptable level), and handling problems in following seas. After many modifications to the hull, the handling problems were finally resolved by modification of the rudders. The rudders were reduced in size and placed vertically (they were originally canted outboard, similar to the placement of the rudders on 41 FT UTB's).

To date, the prototype has operated in breaking seas up to 18 feet and in winds exceeding 50 knots. It has been powered over the top of 10 foot seas at full speed, slammed, pounded into head seas, thrown broadside to 10 foot breakers, and generally beaten up to insure the boat (and crew!) can withstand the rigors of heavy weather/surf operations. The boat and crew have come through this rigorous testing unscathed.

The prototype has proven to be a very capable boat. It is more sea kindly, much dryer, and provides a far better ride in all weather conditions than the 44 ft MLB. The boat's top end speed of 27 knots, the enclosed pilothouse, and reduced boat motions should help to lessen crew fatigue during extended operations. The shortened transit times and the ability to get out of the weather and into a climate-controlled space, where the boat can be operated in relative comfort, are some of the benefits that will be realized with the new boat.

The state-of-the-art electronics package installed on the prototype should go a long way to ease the navigation burden on the coxswain, and result in

much improved capabilities in the SAR and ELT mission areas.

Still to be accomplished is the Design Limit Phase of the testing. In this phase the boat will be operated at the upper limits of the proposed operational limitations. This testing will verify the boat's operational limitations, refine heavy weather operations techniques, and give the Test Team the data to write the operators manual.

The replacement program will soon go into the pre-production phase, in which five pre-production boats will be constructed and delivered to operational units for testing. The units scheduled to receive the preproduction boats are Stations:

Umpqua River
Tillamook Bay
Oregon Inlet
Cape May
Gloucester

Although a firm delivery schedule is not available, the boats should be delivered to the stations sometime in CY 93. When received, the boats will be evaluated by the units under actual operational conditions.

---BM1 John Dodd---
----Test Coxswain----

Personnel Recovery:

Recovery of personnel received a special consideration when the 47 foot motor lifeboat was designed. Although speed and visibility are very important in personnel recovery, if people can't be quickly brought on board and into a warm environment, it really doesn't matter how fast you get alongside.

With this in mind the 47200 was built with two personnel pickup ports, one on either side of the boat. The pickup ports are equipped with "D" rings for crewmen to belt into during heavy weather operations. The recess freeboard is 10 inches from the water's surface. This feature greatly enhances the removal of persons from the water.

From a coxswain's point of view, the height of eye, all round visibility, speed, and platform stability, are all superior to anything in the small boat community at this time. The one problem we have seen is that current recovery techniques are no longer applicable in most cases. The fact of the matter is, they take too long. The 47 Test Team has been able to cut personnel recovery times to 20 seconds manned and ready and 35 seconds for alongside, conducted at approximately 12 knots. The techniques used to achieve these times are not traditional. However, we are still experimenting with new ideas dealing with turning techniques and approaches in hopes of finding the best method suited for this boat.
Editor's note: "Traditional" meaning Destroyer and Williamson turns.

Alongside Operations:

During alongside tests, the MLB's maneuverability, coupled with over all visibility, and stability proved to be a outstanding platform for transferring personnel and equipment.

The only real difficulty noted was moving equipment and personnel to drop off points around the boat. This is inherent because of the current handrail configuration. This problem has been addressed, and the corrected configuration will be implemented on the preproduction and future MLBs.

Mooring:

One of the most common remarks we hear on the Test Team is, "Man, is that boat big. It must be hard to moor in heavy weather." Actually, nothing could be farther from the truth. The installed engines provide all of the power you need to overcome the outside elements acting upon the boat.

The 47 foot prototype will literally "spin on a dime." With this mobility and a little practice you should be able to put the 47 MLB anywhere you want.

There are two areas that seem to give people trouble when they first try to moor the boat. The first is a combination of the height of the steering stations versus the distance from the steering station to the bow, and the height of the bow. These three items added together seem to give new coxswains on the boat difficulty in judging their distance from the dock when mooring. The second area that takes time to get accustomed to is the use of the jog levers. The current jog lever configuration is called a non-follow-up unit. That is, when using the jog lever to move the rudder to a desired position, when released, the jog lever returns to amidships even though the rudder stays at the last input position. In this configuration the coxswain is constantly checking the rudder angle indicator, which takes

attention away from close in maneuvers. This problem has been addressed and will be corrected by installing a follow-up jog lever system. The newer system will allow the coxswain the ability to tell by feel where the rudder is located. For example if the jog lever is set to 15 degrees right rudder, the jog lever will stay there. It is felt by the Test Team that this system, with practice, will give coxswains the same feel for rudder location they now have on small boats utilizing a wheel.

Towing:

The 47200 has towed vessels ranging from 20 to 155 tons, 44 feet to 140 feet, in weather conditions ranging from calm to 10 feet seas, and winds up to 25 knots.

Although the towing capabilities of the prototype proved to be adequate, there were several areas around the boat that could be improved.

The first area that came to light was the amount of towline carried on board. Currently the prototype carries 600' of 3¼ inch towline. This amount proved to be too short, restricting our towing speed, and turning capabilities with larger tows in heavier seas. This problem was resolved by placing 900' of 3¼ inch towline on board. With the addition of more towline, an electric variable speed tow reel will be added to assist crew members in towline retrieval.

Once you have a vessel in tow and everyone is settling in for the return trip, the next area that needs to be improved comes into focus: the visibility!

The visibility from the open bridge, although adequate, could be greatly improved. The obstructions are attributed to a box which houses the quick-acting door leading to the survivors' compartment, and the current placement of the liferings and float lights.

The liferings will be relocated, and the door leading to the survivors compartment has been redesigned to angle forward, removing the box.

The windows facing aft from the enclosed bridge will also be enlarged to improve field of visibility.

The final area that needs improvement is the placement of the deck fittings. Again, the current configuration is adequate but can be greatly improved by adding additional deck fittings to enhance line fairleads, relocate deck fittings to optimize the placement of your tow alongside, opening chocks to assist in running alongside lines rapidly, and canted bitts to insure lines will not ride up the barrel.

Once you get your tow secured alongside, you will have all the power and maneuverability you will need to moor up your tow.

One last note on the towing evolution. Concern has been expressed on the tow bitt being placed too far aft. The feelings are, with the tow bitt being placed over the screws, you could get locked in irons or experience reduced maneuverability with a tow, etc. Thus far, these concerns have not materialized during our tests.

---MK1 John Friend---
----Test Engineer----

Auxiliary Systems & Maintenance:

The major auxiliary systems on board the 47' MLB Prototype consist of hydraulic steering, HVAC (heating, ventilation, air condition) and electrical. All of these systems in part and whole will be changed in some way by the time the five pre-production boats reach the field. In most cases the changes that are being performed generally affect reliability, producibility and ease of maintenance.

Hydraulic steering is divided into two groups, the power group and the manual group. The power group consists of two pumps, one on each engine, two balanced rams, dual relief valve, flow control, filter, and tank. This half of the system is operated through the use of the autopilot in conjunction with a servo ram and pump. In the manual group, you will find a pressurized reservoir, wheel, helm pump, and servo ram. The manual group is its own system and isolated from the power group. Isolation was put in place in case of total main system failure, there would be a back-up steering system. Both of these systems use MIL-H-5606 hydraulic oil. This oil has been identified as a possible health, fire, and waste hazard. In light of this, the fluid will be changed. Maintenance on the individual pieces of equipment in the steering system have been good, parts easy to obtain, and repairs very low. The biggest problems the test team engineers have experienced deal with fluid speeds, hose type, line routing, fittings, and electrical problems.

The HVAC (Heating, Ventilation and Air Conditioning) system is a new and excellent concept for the reduction of crew fatigue on Coast Guard small boats. The currently installed system consists

of two air handlers; one in the survivors compartment and one in the enclosed bridge. Both of these units have thermostatic control knobs located at each unit for local temperature control. The rest of the air conditioning side is like any a/c system with an engine driven compressor, with the exception of a few extra parts so that it can operate in an inverted position. The heating side uses waste heat from the port engine jacket water. This heat is used to superheat the refrigerant before it is sent to the air handler units. The vent side is merely just a fan that circulates fresh air. The overall performance of the current system is poor. At rpm ranges under 1500 rpms the a/c side does not supply enough cold air to adequately cool the compartments. And until the engine jacket water comes up to 160 F, the heating side does not heat. These problem have been identified and will be corrected. Technical support of this system has been very poor. There is no true tech manual, and questions related to the system operation can only be directed to the builder.

The electrical system starts with four gel cell batteries. Two batteries are used for starting and the other two for powering the boat. In the event of battery failure, the two battery banks can be paralleled with a parallel switch. To recharge the batteries two 220 amp alternators are used, one on each engine. Distribution is accomplished through the use of four power panels, 110 VAC, 12 VDC and two 24 VDC. When the wiring leaves the power panels it quickly starts to resemble something one might find on the floor of spaghetti factory. The junction boxes, terminal strips and wire runs are overwhelming. Therefore, we can't give a simple overview of the system layout. Maintenance on the electrical system is a constant on-going battle, trying to keep up with loose wire connections, bad wire runs used in the system. On a whole, the electrical system has been the largest contributing factor in premature equipment failure and equipment casualties. Because of this, the entire electrical system will be changed and simplified on the Pre-Production boats.

Over all, the maintenance record has been relatively good. The problem is that there is just a lot of maintenance as compared to a 44' MLB. But you must keep in mind that the equipment package on board the 47' MLB rivals that of a small ship. With an equipment package of this size there will be more maintenance. As stated before, steps are being taken to simplify and increase reliability, thus reducing the current amount of maintenance performed.

---MK1 Eric Williams---
----Test Engineer----

Main Propulsion:

The propulsion system consists of two Detroit Diesel 6V92TA, 450 horsepower, turbocharged engines, and a ZF 160S reduction gear. The machinery is arranged in a "U" drive configuration.

The 6V92TA has proven to be a dependable engine in this application. The small boat community is very familiar with Detroit Diesel, so implementing a maintenance program for these engines should not be a problem.

The engine is hard mounted to the engine bed in a reversed position using "chock fast orange." It is connected to the reduction gear (mounted in the survivors compartment) using a cardan shaft. The cardan shaft has universal joints at both ends and a vulcanized rubber coupling at the flywheel for flexibility.

The ZF 160S reduction gear is a "U" drive, "S" configuration. It has a gear ratio of 2 to 1 in both forward and reverse gears. A lube oil cooler is provided to maintain a lube oil temperature of 125-180 F, using 40wt oil for gear lubrication and clutch apply pressure. This gear box is rated for 900 horsepower. With only 450 horsepower maximum input, the service life of this gear should be excellent.

The propeller shaft is hard mounted to the output flange of the reduction gear using a standard alignment procedure. The engine is then aligned to the reduction gear, maintaining no more than a seven degree angle between cardan shaft and each piece of machinery. A simple alignment procedure for the cardan shaft has not been developed and needs to be addressed. With the present procedure, it will be difficult for the field to accomplish.

Preventative Maintenance:

The test team is in the process of drafting a PMS schedule.

Maintenance requirements for the 47 MLB will not exceed that of the 44 MLB. Many of the procedures will actually require less hours or will be deleted all together. For example: there is no compressed air system on board and no fire pump or associated piping to maintain. There are no airbox

drains to check and no throttle cable adjustments to be made. The most complicated system on board is the HVAC. The PMS requirements for this system would be best served by a commercial contract. The bottom line on maintenance: these are systems on which most engineers have training or experience.

There have been many rumors about this boat being too complicated to maintain at the unit level. It will only be complicated if the personnel are not willing to learn.

---BMC Terry Smock---
----Test Coxswain----

Heavy Weather Operations:

Sea conditions ranging from 6-18 feet and winds to 45kts have been encountered off the Columbia River and various places along the Oregon, Washington, and California coasts. During these tests, the boat's performance has been very good. The deep V hull design combined with the longitudinal center of gravity (LCG) located aft, keeps pounding to a minimum giving a very stable and relatively dry ride even at speeds in the 15-20kt range. This greatly reduces the time spent on a sortie. Prior to the boat's arrival at Cape Disappointment, there was concern about the relatively large flat stern. This has not shown any undesirable effects while operating in heavy weather. The ability to operate the boat from either topside or the enclosed bridge enables the crew of the 47 to have an increased endurance over that of the 44 MLB crews. Although the boat's performance is very good, it is not without its shortcomings. Presently, the open bridge has adequate seating for two personnel and the enclosed pilot house is very cramped with only two usable chairs. This leaves two personnel unsecured inside the pilot house with many hard, sharp objects to bounce around on. The layout of the instruments and electronics is not very user friendly. All this, however, has been addressed. From these findings, the building of a mock-up of the enclosed and open bridge layout was done so the optimum configuration and arrangements can be incorporated into the pre-production boats.

Anchoring:

The configuration of the 47 footer for anchoring appeared straightforward and simple. The anchor was stowed on the forward handrail stanchion. The chain being stowed in the forward deck locker was then utilized as the anchor line. However once this test progressed to some moderate weather, this system became quite unacceptable. Trying to run a line forward from the aft deck and get the chain from the deck locker, then hooking all this to the anchor on the stanchions forward created too many steps in the process, making the crew spend more time on the bow than necessary. Because of the boat's LCG being aft, the bow is very lively in moderate to heavy seas. This combined with the many steps required to rig the anchor creates an unsafe and unacceptable arrangement. Since most motor lifeboats anchor only in an emergency when the situation and conditions are at their worst, it is necessary to be able to anchor quickly and easily. To do this, the 47 is being reconfigured by putting the anchor, the chain, and the line assembled in the forward deck locker. The forward handrail will then be split to allow the anchor to be thrown over the handrail and funneled down to an open but closable style bull nose. This will make the anchoring task very simple and lessen the time spent on the bow.

Helicopter Operations:

As with all of our small boats, the major downfall in this operation is communication. Since the 47 is equipped with an enclosed and an open steering station you have your choice of being inside the pilot house where communications with the helo are good but communications with the crew are nonexistent (even when utilizing the PA), or using the open bridge station where communication with the crew are fair but your communication with the helo are nonexistent when the helo is nearby. A possible solution is to place a headset on the working deck so that a crewman can monitor the radio transmissions between boat and helo, or a headset for the coxswain on the open bridge.

Deck space is adequate on the aft deck which is the preferred hoisting location by the helo pilots. However, with the mast being farther aft on the 47 in comparison to other small boats, it creates problems with the helo's ability to see it for a reference. It would seem that a simple solution would be to fold the mast down. However, the mast at present folds aft restricting the hoist area. A possible solution is to fold the mast forward out of the way. Even with the problems stated above the 47 performs this operation adequately.

---BMCM Roger W. Russell---
----Senior Test Coxswain----

Surf Operations:

Testing in this area, although incomplete, has been extremely impressive. Operating conditions have ranged from small 4-5 foot sluffers to 18+ foot (pucker factor 9) very impressionable breaks. Waves up to 10 feet have been taken on the stern, quarter and beam with various power applications including Dead in the Water (DIW). The results varied from little to no heel with significant power applied to approximately 70-80 degree heel. At no time did the Operator or Crew feel the boat was going to roll. Clutching ahead through breaks up to 12-14 foot on the bow is all that is required so the boat is not carried backwards by the wave. It has been extremely difficult to get any significant water on the forward deck. These last two characteristics are mainly due to the massive buoyancy of the forward portion of the vessel. The 360 degree unobstructed view from the open steering station is a feature of high value to the operator. The 47' MLB is nothing short of impressive.

Piloting:

The new state of the art electronic package is the driving factor in the Prototype MLB's piloting capabilities. Included in this package are the following:

- FURUNO 1510D Raster Scan Radar with RP-1 Video Plotter
- FURUNO LC90 Mark II Loran C
- SIMRAD TD-L1520 VHF/FM Direction Finder
- MOTOROLA MCX1000 VHF/FM DES Radio
- ICOM IC-M700 HF/SSB Radio
- DATA MARINE "DART" Fathometer
- KVH Industries Electronic Compass
- ROBERTSON Rudder Angle Indicators
- ROBERTSON AP45 Auto Pilot
- STANDARD, HORIZON LH10 Loudhailer/Intercom

The addition of a high quality Autopilot will be a welcomed sight to our boat crews. The quality and capability of the radar is nothing short of outstanding. "Its about time, right folks"? It is leaps and bounds above anything we have seen to date. The unit is completely interfaced with LORAN-C and Electronic Compass input to provide our every need. With the RP-1 Video Plotter, the Coxswain is able to draw their search pattern on the Plotter, go to a True Motion Plot function, and drive through the search pattern. The unit is equipped with a portable remote control that you can place in your lap to conduct plotter functions. The two VRM (variable range marker) and two EBL (electronic bearing line) capability add to the ease of obtaining radar fixes. The enclosed station will be equipped with a fold down chart table, with all the navigation equipment and charts within easy reach. In short, your piloting will be a breeze. All these capabilities, coupled with the stability of the boat and enclosed, environmentally controlled work space, will make it much easier to navigate our boats.

The prototype enclosed and open steering station arrangement is presently a weak point in the design. Equipment and gauges are not located and positioned properly and the enclosed steering station space is severely cramped. With the mockup, we will completely rearrange the spaces to meet operational need and ease of movement and seating. These changes will be incorporated in the pre-production boats.

Firefighting & Dewatering:

There are weak and strong points in these capabilities on the prototype. Listed below are some of the concerns and recommendations from the Test Team. The design and outfit must be modified to address these shortcomings.

Dewatering capabilities:

The five main water level compartments are equipped with 24 Vdc submersible bilge pumps and automatic float switches (2 ea. in the engine room & auxiliary machinery spaces). These are 2,000 GPH (33 GPM) units inadequate for any flooding type condition. The addition of standpipes similar to the engine room suction system in all major spaces has been recommended by the Test Team and would provide the necessary dewatering capability, but has been disapproved for various reasons. The engine room can be dewatered very nicely with the P-5 drop pump utilizing the installed standpipe for that space.

Firefighting:

The P-5 portable drop pump is used with the firefighting standpipe on the aft deck. This is an outstanding system design which allows us to take suction from a through hull connection at virtually any speed through the water. This system provides a full 225 GPM capacity and you have full maneuvering capability of the vessel with both

engines. Early tests have shown this system to be minimally effective since it lacks the capability of laying down foam. An in-line foam eductor is being developed by the pump manufacturer and additional firefighting evaluations are scheduled. Initial prototype tests with foam are promising. There is an excellent fire detection alarm system in the engine room. This audio and visual alarm is located at both steering stations. The installed Halon system is outstanding. It provides Halon 1301 to a nominal 7 percent by volume concentration to the engine space. The discharge is manually initiated from the enclosed or open bridge control consoles. Actuation is arranged to provide a two-shot system to allow us to extinguish an engine room fire and still have another system on standby. The system is interlocked with the engine shutdown and fan switches so that everything is secured before the discharge. Requests have been made to provide additional pull handles just outside the engine room.

In addition, the boat is provided with three (3) type B-I portable carbon dioxide and one (1) type B-II portable purple K fire extinguishers in mounting brackets.

In conclusion, our capability of fighting fires on our own boat is reasonably good, yet quite inadequate for response to distressed vessels.

Editor's Note: The whole idea of a prototype was to identify potential discrepancies. As the pre production boats are built and tested under operational conditions, other items of concern may surface. That's why the MLB replacement program has these two phases prior to a production run.

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AMVER II NOTES

By: LT Steven Godfrey, G-NRS-1

Recently, AMVER went through a complete computer system "metamorphosis", growing from a difficult, hard-to-read, interpret system, into a colorful, user-friendly system which is a great improvement over its predecessor. In my discussions with the OPCENs that are using AMVER II, it appears that most of them have worked out the kinks and the system is a definite hit.

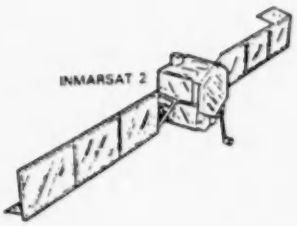
A demonstration version of AMVER II has been installed at the National Search and Rescue School in Yorktown. All future classes will have some exposure to its operation. Students assigned as OPCEN controllers will be given the opportunity to sit down and get some hands-on with the demo version and take the system through its paces.

As with any new system, there are features that are "nice to have" that are overlooked during the design or were beyond the scope of the original project. We are always interested in comments and suggestions for making the system better. Address your comments to:

COMDT (G-NRS-3)
or E-Mail to: NRS-3/G-NRS.

The staff at the Coast Guard Operations Systems Center (OSC), Martinsburg, WV, would like us to pass on their thanks for your patience and assistance during what was, from a computer system standpoint, a very smooth transition. For those that experienced system outages, rest assured that the kinks have now been worked out.

OSC is slowly transitioning from a government-run operation to that of a contractor-run facility with government personnel on site to oversee the operation. Battelle Labs of Columbus, Ohio was awarded the Operations and Maintenance Contract for the facility and their personnel are now running both the AMVER and Law Enforcement Information System Data Entry systems. Battelle passed a formal Operational Capabilities Demonstration earlier this month with flying colors. What worried us most was the possibility that a contractor could not assume these functions. But with the ease of the operation, thanks to the changes brought by AMVER II, the transition to contractor personnel went without a hitch!



SARSAT,

a Status Report

By: The National Oceanic and Atmospheric Administration (NOAA)

The following is a weekly informational report used mainly as a SARSAT system oversight and management tool by NOAA. It shows some interesting SAR incidents involving beacons that have been reported by the US Coast Guard and US Air Force between 14 and 21 January, 1992. Other system performance information is also provided.

A 406 beacon was detected near Kodiak, Alaska. The vessel SILVER CHALICE was flooding uncontrollably and the crew abandoned ship. A USCG helicopter rescued the crew.

4 LIVES SAVED

The vessel KAPITAN was unable to start its engines in inclement weather. After communications were established, the USCG requested EPIRB activation for position information. USCG assisted in starting the engines and guided the vessel to an island to wait out the night and storm.

3 LIVES SAVED

A 406 beacon was detected in the Gulf of Mexico. USCG called the owner who reported that he sold the vessel. USCG called the new owner of the vessel CAPTAIN who reported that the vessel was out fishing. When the USCG aircraft arrived on scene, a flare was fired. A radio was lowered to the vessel and the master reported that the vessel was taking on water. USCG lowered two pumps to the vessel and vectored a cutter to assist and tow the vessel back to port.

5 SARSAT RESCUES

A 406 beacon was detected off the west coast of Florida. The vessel BIG BUCKS was disabled and at anchor. The vessel was assisted back to port by a nearby vessel.

2 LIVES ASSISTED

USCG received a Mayday by radio from the vessel DOUBLE TRAK. The vessel was sinking. USCG received a 406 MHz first alert and launched two helicopters and two cutters to a location 30 NM southeast of Wrightsville Beach, North Carolina. The crew abandoned ship, took the EPIRB with them and were located 20 minutes after the vessel sank. The helicopter took them to a hospital where they were treated for mild hypothermia and released.

2 LIVES SAVED

A 406 beacon was detected 550 NM north-northwest of Honolulu, Oahu, Hawaii. The vessel SUNRISE I was disabled and out of food and water. USCG dropped supplies from a C-130 aircraft and a USCG cutter towed SUNRISE I to port.

6 LIVES ASSISTED

A 406 beacon was detected 100 NM west of Kauai, Hawaii. The vessel CAROLINE L was disabled and out of food and water. USCG cutter was unable to start the vessel's engines and towed it to port.

6 LIVES ASSISTED

TOTAL = 28 RESCUED IN SEVEN DAYS

Each 406 MHz beacon is uniquely coded. The code provides specific information on the vessel, including its nationality. This list shows the nationality of the beacons activated this week. It's truly an international system.

406 BEACONS ACTIVATED	NATION
31	USA
1	CHINA
1	CHILE
3	COLUMBIA
1	GERMANY
1	INDIA
1	NAMIBIA
2	RUSSIA
5	UK

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46 = TOTAL

Registration of U.S. 406 MHz EPIRBs gives SAR authorities important information along with the SARSAT alert. That data also enables us to use geostationary satellites alerting capability. NOAA manages the U.S. database. Here are the current stats:

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406 MHz BASE SUMMARY

A. Total Beacons Entered:	**9896**
B. Beacons Entered this Week:	**128**
C. Beacons Received this Week:	**131**

406 MHz EPIRBs are a great improvement in reliability when compared to the 121.5 / 243 MHz class A or B EPIRBs. This list shows the number of first alerts generated in the system as compared to the number of times the satellite system sees the alert a second time, enabling it to combine the alert data into a refined, composite position. The high number of 121.5 / 243 MHz false alarms is highlighted by this data. 406 MHz alerts that do not get confirmed as composite locations are usually caused by users testing their EPIRBs, or mishandling the beacon. SAR authorities use beacon registration data to contact owners quickly, silencing false alarms or confirming the possibilities of distress.

***** BEACON SITES CLOSED *****

	FIRST ALERTS	COMPOSITES	% COMP
121.5 / 243.0	**2010**	**222**	**11%**
406	**46**	**22**	**48%**

WATCH THAT WAKE!

By: LCDR M. J. Lewandowski, G-NRS-2

How often have you been painting the stripe on one of the boats at the pier and all of the sudden there's a relatively huge set of waves bouncing around the boat basin? Next thing you know, your can of International Orange has covered your boot and rolls off the paint float. You jump up onto the pier and see a trawler steaming out through the jetties and shout "You *()#¢$ jerk, watch your wake!"

We recently received a copy of an investigation which details what happens when one doesn't watch one's wake. In short here's what happened:

One evening, a UTB was sent to assist a pleasure craft reported by another pleasure craft to be taking on water, approximately 8 miles from the harbor. Visibility was good, with calm winds and seas. With darkness approaching and the prospect of searching for persons-in-the-water (PIW), the coxswain wanted to get on scene ASAP. As the UTB went from the station to the harbor entrance channel, nobody on board noticed anything unusual about the UTB speed (estimated to be approximately 8-10 kts) nor the wake being produced. As the way out would take the UTB past a yacht club, the coxswain energized the siren occasionally, so as to "warn the boats at the yacht club he was coming so they could brace themselves".

After clearing the harbor, the UTB went searching for the vessel, first in one direction, then the other. The reporting source was found to have escorted the distressed vessel to its boat ramp, and by the time the UTB arrived, the distressed vessel, on its trailer, had already departed.

Let's go back to the harbor. Mr. "Red" of the yacht club noticed the wake from the "passing of the CG cutter" cause damage to some of the boats moored (six or so). Mr. Red also said that the yacht club dock sustained damage when stanchions were broken as boats rode up under them. Mr. Red estimated the height of the UTB wake as six to seven feet. (Mr. Red asserts that the height of the dock is 6 ft above water and that the wake washed over the top). Mr. "Blue" estimated the wake at greater than 4 ft as it bounced his boat off the pier face. Mr. "Hazel" estimated his boat rocked 30 degrees and then got caught under the dock's fendering system. The list goes on. Several vessels at the club had rubrails separated from the hulls, had cleats displaced, and mooring lines parted.

The "reported" nature of the "apparent" distress, lack of direct comms with the distressed vessel, distance from the harbor, and concern for the safety of the persons on board all led to an extremely high level of anxiety. This anxiety contributed to a loss of situational awareness (what a wake could do in an enclosed area). This case of "SAR Fever" left a sizeable amount of damage "in its wake" and did nothing to enhance the reputation of the Coast Guard in the eyes of the local population.

In the investigator's opinion, the coxswain was negligent in the operation of the UTB, being unaware of the vessel's actual speed and actual wake. Any wake in a relatively confined area carries with it a risk of damage to other vessels and the chance of causing injury to others. A response which unnecessarily risks other persons or property is seldom appropriate.

The matter of situational awareness is easily and frequently overlooked when dealing with wake action. Think about some other instances which might occur:

It's the "Mother of all Marine Events." I mean, big...HECs, MECs, PBs, UTBs, even a DD... PATCOM advises you to get back to the harbor ASAP, there's been a change in mooring assignments and your MEC must moor inboard and forward. What the heck, your MEC has a long waterline, increasing speed to 14 kt won't make that much of a difference...after all, there's over a thousand boats out there & some of them are doing 25-30 kts on the way in. With all the wakes already, one more won't make a difference. Of course while

you're accelerating, all 100 spectators on the HEC you just passed are all complaining "why don't we go that fast?" Then they see you overhaul a 27' sailboat, and notice that it goes into severe gyrations with the crew almost being tossed from the cockpit. An observant spectator shouts "Hey, that other cutter just about swamped that boat!" Oh, well, everyone within earshot of that "irresponsible" spectator got a chance to witness "professionalism at it's best."

Remember, you are responsible for your wake, even after your vessel goes by. Your wake may be large enough to cause some harm on its own, but when it interacts with the wakes of others, it could even do more damage.

Here's another:

There's a big storm brewing down the coast. The weather in the local op area is really nice but a little breezy. It's that time-of-the-month (spring tides) though, and this month, all the forces combine to create a high tide that's just a bit higher than normal. You think, wow, the pier floats are riding high on the pilings. After getting underway for a log run and getting up to speed, you see some people waving at you from a pier. You wave back. Then you realize as you watch the wake break over the pier face that those folks on the pier were waving at you to slow down and reduce your wake, which in the interim has splashed over the pier face, down the pier and into a door. Oops, hope they don't call the boss.

When the wind blows from one direction for a long period of time, and if the atmospheric pressure (barometer) is very low, the water levels in certain areas can rise an additional three feet...on top of high tide. A "storm surge" is not limited to a hurricane. Your one-to-two-foot wake just crashed over a pier that's usually well above MHW. (Now you'll have to deal with the "storm surge" from the Chief).

These are only three actual examples of not watching one's wake. I'm sure that everybody has a multitude of others. Though situational awareness factor often comes into play concerning wake damage, but common sense also plays a major role. (Just because it's Tuesday afternoon doesn't mean that Joe Doakes isn't in the marina working on his boat). Some things to remember:

A wake in a confined area reflects and refracts (bounces and bends).

Waves frequently travel long distances. (Watch out for that person in hip waders who's fishing in the flats.)

In choppy water, whether from winds or from the wakes of others, the wakes and waves can pile up or combine to be a hazard to small vessels.

When water levels are high, opportunities to cause wake damage to the shoreline increase.

"NO WAKE" and speed limit signs pertain to us as well as anybody else.

Don't let "SAR Fever" or "Get-Home-itis" get the best of you, WATCH THAT WAKE.

RHIBS IN THE COAST GUARD

By: LCDR Mike Monteith, G-NRS-2

This is the inside story of what's happening, or not happening, with Rigid Hull Inflatable Boats in our Coast Guard.

There's a lot of interest around Headquarters lately in RHIBs. It's about time, you say, that we wake up and get interested since there are about 450 of them in Coast Guard service. So what are we thinking about RHIBs?

The truth is that Headquarters has always been interested in RHIBs and has meddled with them since the introduction of the first 6.0 meter outboard boat in 1978. (The first RHIB was developed in Wales around 1962.) I say that Headquarters has "meddled with RHIBs" because over the years, various Commandant interests have been involved with dozens of RHIB projects. However, no one Office or management doctrine has evolved to guide acquisition, training, operations, or maintenance philosophy for these unique craft.

Despite the lack of Headquarters direction, or in spite of it, the Coast Guard has become enamored with RHIBs. In the words of an anonymous Boatswain's Mate, "The worst RHIB I ever rode in was good."

Several factors may explain the exponential increase in RHIB popularity in the Coast Guard. RHIBs are:

(a) fast and fun to drive.
(b) extremely seaworthy and forgiving (to a fault)
(c) tailor made for our various missions involving over the gunwale operations.

Our position is that, "RHIBs are best used where RHIBs are best used." That is, RHIBs excel at some tasks but are not appropriate resources in every case. Too often we see RHIBs utilized inappropriately when safer, more capable resources such as aircraft, UTBs or MLBs were close at hand. However, even a cursory review of contemporary Coast Guard operations shows that we love our RHIBs and use and abuse them in every mission area. They have become essential resources in our small boat collection.

A closer look at Coast Guard RHIBs reveals about seventy-five 6.0 - 7.0 meter boats are deployed aboard our ships 180 feet and greater. Approximately one hundred twenty-five RHIBs in the 4.0 - 5.5 meter category are used on our patrol boats, tugs, and coastal buoy tenders. The remaining RHIBs are used by shore units, LEDETs, and specialized units.

With the exception of the 270' WMECs and a few WLBs, the larger ships are now using diesel inboard/outdrive boats. Gasoline outboard powered RHIBs are predominant on patrol boats, tugs, and at most shore units. Most RHIBs in Coast Guard service ashore are under seven meters. A few exceptions include

8.0 - 9.0 meter diesel jet drive RHIBs in use for special shoalwater work in such locations as Oregon Inlet, NC, Chatham, MA, and Portsmouth Harbor, NH(Presidential Detail).

Our RHIB inventory comprises boats made by at least six manufacturers and has over 30 different models and configurations in service. This smorgasbord of RHIBs is a result of a decentralized buying practices which has encouraged districts and areas to purchase different boats according to their "special" needs. In truth, many of our RHIB purchases over time have been based upon the boat that was most easily procured, rather than upon any correlation of operational needs against salient boat characteristics. In hindsight, this practice has led to a proliferation of too many species of RHIBs in our Coast Guard. For example, very few RHIBs on our cutters can be cross decked between ships, even of the same class. Many RHIBs within the same shore groups share no common spare parts. In summary, efficient and effective operational, logistics, and training support for so many different boats is nearly impossible.

Further, since all but about 35 RHIBs in our inventory are considered "nonstandard" boats, there has been no recurring financial or fleet systems support for them. RHIB owners; ships, stations, districts, and the areas have been "on their own" with regard to developing operating doctrines, acquiring training, and establishing repair and maintenance practices. This has left the areas, the districts, and their respective boat managers to independently discover what works and what doesn't. In our traditional "can do" way we have kept the RHIBs going.

Unfortunately, lack of a fleet systems approach to RHIB management has probably handicapped our forward motion with regard to recognizing and solving various fleetwide deficiencies and safety concerns. As an example, since there is no official casualty reporting and monitoring system for RHIBs we have no way to identify recurring engineering problems. Yet, we know that fuel, steering, and electrical systems are constant break points on all of our RHIBs. Also, our eclectic approach of marrying GSA procured engines to GSA procured RHIBs frequently creates mismatches of mechanical systems which prematurely fail (or in some cases RHIBs that are too fast for our own good).

In response to these noted concerns, Headquarters has begun to again "meddle with RHIB management." Several Headquarters initiatives are now beginning to affect how we manage and operate RHIBs. Foremost, is guidance from the Coast Guard Chief of Staff to stop the proliferation of different RHIBs. Within the limits of common sense, and procurement law, we have been directed to seek consolidation and standardization in all nonstandard boats. Most promising is the recognition by various operational and facility managers in Headquarters that RHIBs are unique and deserve a special advocate in Commandant. This may result in the equivalent of a "type desk" to address fleetwide engineering and logistics issues. Also of note is the continuing interest of the Headquarter's Vessel Safety Branch which has begun to see increasing RHIB mishaps as an alarming trend.

Within Headquarters, the following issues and projects related to RHIBs will be of interest to Coast Guard boat managers as well as to boat crews.

Coast Guard "Standard" RHIB

A specification has been developed in Headquarters for an 8 meter RHIB which incorporates the best features in reliability and performance learned from our experience with these craft. Included in the specification are standards for such things as collar durability, steering hardware, fuel and electrical systems, and crew seats/restraints. The boat described by this specification was intended to be used with dual-fall davits and would replace MSBs, MCBs, and all other shipboard RHIBs. This long awaited Coast Guard "standard" RHIB is still years away, however, as the plan has been shelved due to complications securing adequate funding for both the boats and the davits. As an interim measure, more MSBs will be built to replace, in

kind, the aging fleet of these hardsided workboats.

Diesel RHIBs on the New Buoy Tenders

Current plans are to equip the next generation of WLBs with the Coast Guard "standard" RHIB. The WLB Replacement Project is currently underway in Headquarters with a contract for a prototype ship expected soon. Perhaps, if the "standard" RHIB is delivered with the new WLBs then the design may migrate over to the white ships as originally envisioned.

Standardization of the 6.4 meter Hurricane/Zodiac RHIB

Over the last several years this boat has become the "de facto" Coast Guard standard RHIB on all of our white ships, except the 270 WMECs. It has also found its way onto several buoy tenders and the ice breakers. This boat is favored as it is the only easily purchased commercially available RHIB that fits in the available deck space. However, these boats are far from "standard." There are at least five variations of the same boat in fleet service. Some use sling pick-ups; others use cages. Some have stand-up coxswain stations while a few new deliveries have sit-down "delta" crew seating. Because these boats are considered nonstandard; financial, logistics, and fleet systems engineering support has never been provided by Commandant. This lack of support has frustrated field units for many years. In response to this problem, the Cutter Division is preparing, after a field survey, to decide which version of the 6.4 meter Hurricane/Zodiac RHIB is best suited for our cutter operations. So determined, all new purchases of 6.4 meter RHIBs will be for the same boat configuration. This boat will then be supported by the Naval Engineering Division as a "standard" boat. Essentially, this means that a type desk will likely be established and the fleet of boats will be viewed and managed as a system rather than as dozens of independent RHIBs.

Standardization of Patrol Boat RHIBs

Plans are also being made to declare which RHIBs, in which configurations, will be carried aboard the different classes of patrol boats. The goal here is to limit the proliferation of different RHIBs. This first step should eventually also lead to a systems approach to management of patrol boat RHIBs.

Standardization of Shore Based RHIBs

Having every shore unit in the Coast Guard using the same RHIB, in the same configuration, is not a goal. However, limiting our inventory of shore based RHIBs to the minimum number of different boat types needed to do our missions is important. All districts have been making progress towards standardizing to the greatest extent possible. Most districts have now decided upon a specific RHIB for the majority of their units and have modified procurement strategies to purchase identical boats in the same configurations. Such programs have already begun to pay dividends in decreased acquisition costs, superior logistics support, and improved reliability.

Accident Trends in RHIBs

Recent mishap Reports from RHIB users suggest that our accident rates continue to statistically outpace mishaps in "hard-sided" traditional boats. This is a serious concern in Headquarters and led to the recent release of Safety Advisory 001/92 reminding RHIB crews, and their operational commanders, to be careful. **A simplified analysis of RHIB accidents suggests that most mishaps are the result of:**

(a) Poor risk assessment – unnecessarily putting the boat in harm's way

(b) Inappropriate behavior at the helm – wave jumping, hotdogging, etc.

(c) Engineering systems failure – engine, steering, fuel, or electrical systems failures which lead to secondary casualties such as capsizing, grounding, and crew ejections. (Most RHIBs in our inventory rely heavily upon engineering systems designed for recreational boats which are not up to the rigors of continuous duty or heavy weather service.)

(d) Inadequately trained crews – coxswain and crew were simply not prepared for the jobs asked of them or did not understand the capabilities and limitations of the their boat.

RHIB Training

Currently, there is no Coast Guard resident training for RHIB crews. We rely almost entirely upon unit training, though several districts have purchased occasional RHIB training from civilian

contractors as funds permitted. This practice has often been controversial, both in and out of Headquarters. First, there is the argument that such training is not needed at all. Further, there have been numerous reports that the training delivered by contractors has not always been appropriate to our "Coast Guard way" of operations. These questions of need and validity of contractor training remain unresolved. Regardless of need, there is little chance that we will start our own RHIB training program in the near future; resource shortages simply preclude such an option. There is some talk of including a module on basic RHIB operations in the Coxswain Class "C" Course. The Search and Rescue Division is also informally talking with the Navy's fledgling RHIB training program at Little Creek, Virginia. The possibility of a joint service training program has crossed our minds.

These noted issues and projects all include some element of contention as each requires commitments in hardware, money, or policy. Therefore, their final outcomes are speculative. However, we can expect that evolutionary improvement in our RHIBs and their operations will continue. Some trends we see are:

Jet Drive Diesel RHIBs

While relatively foreign to our Coast Guard, jet drive propulsion units are well proven in RHIBs in other services around the world. Our experience with them, to date, has been very positive. The U. S. Coast Guard has six jet drives in service ashore with several under consideration. Use of jet propulsion ashore will likely be limited to shoalwater areas. However, a 6.5 meter diesel jet is under consideration as a replacement boat for the gasoline outboard RHIBs now deployed on the 270 WMECs.

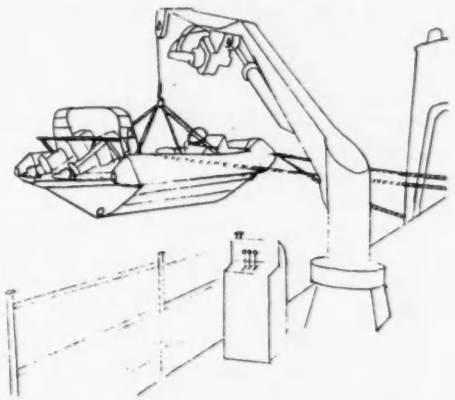
Buoyant Foam Non-pneumatic Collars

RHIBs with variations of different closed cell foam collars are now prevalent in Europe, Canada, Australia, and New Zealand. These foam collars, as compared to inflatable collars, are virtually indestructible or least nearly "Boatswain's Mate proof." The foam collars also retain most of the characteristics and advantages of the inflatable versions. Unfortunately, we are unable to easily procure RHIBs with such innovations in the United States. There is one such prototype boat being used at Station Coos Bay. The boat was retrofitted with a foam collar which is sufficiently robust to absorb a dagger driven into it by a crazed seaman! As a retrofit, however, there were some other compromises to weight and handling which resulted in a less than optimum RHIB. We expect to see foam collar options available from several American RHIB manufacturers in the coming years. Obviously, we would like to see this technology arrive here in a form we can use.

Diesel Outboard

We are watching some promising adaptations of diesel outboards to RHIBs now undergoing tests in England. Once started, they run underwater and offer greater torque (towing and load power) than gasoline outboards. There may be a future for these on our patrol boats.

Improved Davit/Boat Handling Systems



We have recognized for some time that our marriage of deck cranes to RHIBs on our cutters has produced marginal boat handling systems. Our piece-meal acquisition of RHIBs over the years has perpetuated this problem. We have never treated the RHIB and the davit as a system. Finally, some things are changing with our davits. Ships are being retrofitted with constant tension systems and the specification for the replacement WLB requires that the RHIB and davit actually work together as a system. There are also several research and development projects in the works to study how to improve RHIB handling on the next class of patrol boats replacing the 82' WPBs. Some of this better technology will, hopefully, find its way back into the fleet.

Finally, a message to all RHIB coxswains, "Please try to keep the hard side down."

RESCUE AND SURVIVAL SYSTEMS NOTES

By: CWO Mark O. Hyde, G-NRS-2

PROTECTIVE CLOTHING FOR BODY RECOVERY

We occasionally have the unpleasant task of retrieving bodies from the water. This is normally done without donning any special protective clothing. This may result in placing our personnel at risk. We are not immune to having a worse case scenario. In one case, a small boat station recovered a body which, after they placed it on deck, exploded due to gas buildup and exposed the crew to body fluids. It turned out the body was HIV positive.

I contacted the CDC (Centers for Disease Control) and inquired about the life of the AIDs virus in a deceased body. The best data they can provide is up to 24 hours. This may be extended if a body is cooled rapidly such as in cold water immersion. At this time the test data is incomplete and very difficult to obtain. Contracting AIDs from handling bodies is unlikely because the virus is not very hardy; but other virus, such as hepatitis, are virulent.

The use of protective clothing may be prudent when handling bodies. I have located a company that has a communicable disease protection kit which consists of a pair of disposable coveralls, boots, heavy duty gloves, and goggles. The cost of this kit is $12.90 and available from:

Central Valley Professional Services
P.O. Box 576065
Modesto, CA 95357
(209) 521-0071

Communicable Disease Protection Kit

Small	**701300**
Medium	**701301**
Large	**701302**
X-Large	**701303**

Another item that may be of benefit is a water recovery body bag. The body may be placed in the bag before you remove it from the water because the water flows through the bag freely. This bag was tested by the UTB Systems Center. They found it worked well in simulated recoveries. The water recovery bag is $40.50 and available from:

Life Time Covers, Inc.
4088 North Henry Blvd.
Stockbridge, Georgia 30281
(800) 875-1343

Water Recovery Bag
Model 300R

DROP PUMP DRUM CLOSURE RINGS

In the last 20 years I've seen three types of drop pump drum closure rings. These are the side clamp, top clamp and bolt-on. They all have their problems and I haven't found the perfect closure ring yet. The side clamp is weak and breaks easily, the top clamp corrodes and becomes useless, and the bolt-on requires tools to remove.

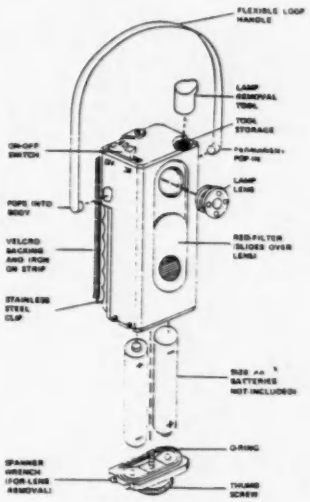
Last year the UTB Systems Center conducted a pump survey and units identified the closure ring as a problem. I contacted the manufacturer of the closure rings and now require him to zinc plate and powder coat the top closure ring. This change should reduce the corrosion problem with this ring and this is the standard ring now. If you want some of these closure rings you may order them from Brooklyn Supply. The stock number is: 5340-01-144-7003.

CHECK YOUR RIVETS

Some of you who have purchased the new kayakers-type helmets have noticed the chin strap rivets corroding. If this has happened to your helmets you can get free stainless steel rivets by calling Lifesaving Systems (813) 645-2748. These new rivets can be applied with a standard pop rivet gun.

A NEW LIGHT

Thanks to BM2 T.C. Stentz from Station Yaquina Bay who sent me information on a personal mini-lantern. He states the light is very useful for night nav and is convenient because it has a neck lanyard or it can attach to the storm flap on the antiexposure suit. One of its nice features is the one-handed operation of the On/Off switch and the red filter. This rugged, waterproof, lightweight, compact unit can be procured by ordering NSN 6230-01-035-6077. The O.C.S. mini-lantern costs about $13.00.



O.C.S. mini-lantern

RECYCLE CHEMICAL LIGHTS

Cyalume lightsticks are now being used for a number of different purposes. They can be used to mark shot lines, tow lines, simulate fire/smoke, or mark ladders during drills. After chemical lights are used for drills they can be frozen. When thawed they are reusable. Although this will not be an option for survival equipment, it is practical for some operational situations and during drills. This is another good way to save money and the environment.

FREEBIES FROM HEADQUARTERS

You may have noticed your station recently received a box from NEO SPORT that contains an assortment of patches for Exposure Suit, Wetsuit, GoreTex, and other exposure gear repair. Don't call the manufacturer and tell him you didn't order this. It has been paid for, compliments of G-NRS. I purchased these kits because Standardization Teams are reporting units' survival gear deteriorating. In today's budget crunch you can't afford to purchase new exposure gear every time it develops leaks or has a small hole. This kit should extend the life of exposure garments.

Each package contains 15 Knee patches and 20 small hole iron-on patches. To use the Neo Patch you need to clean and thoroughly dry the garment. Then cut the patch and iron it with a pre-heated household iron. The iron should be set on permanent press (approx. 340° F dry, no steam). Press Neo Patch down for 10 seconds. Lift and rotate iron. Press down firmly again for approx. 15 more seconds. Allow the material to cool, then check for security of the patch. Do not use these patches to repair your dry suits. If you need any of these patches, you can call me: I have a few that I can send out. c/s

TECHNOLOGY AND SAR

By: AMR Staff and LT Steven Godfrey, G-NRS-1

As 1992 unfolds, we stand at the threshold of a new era in the annals of safety at sea. The introduction of maritime radio communications early in this century revolutionized the ability of ships and shore stations to render aid to a ship in distress. Today, space-age technology is being brought to bear on the science of search and rescue. To make room for these developments, we will soon bid a sad but grateful farewell to those traditional stalwarts of safety at sea: Morse Code, the 500KHz watch, and the ship's radio officer. But in their place, we welcome such soon to be household names as ELT's, EPIRBs, ARGOS, GMDSS, INMARSAT, COSPAS/SARSAT, and an enhanced AMVER system.

There is a certain misconception that each of these systems is mutually exclusive, and that operating independently, each can fulfill the search and rescue needs of the SAR mission controller. Actually, each of these systems complements the other, and together they combine to speed assistance to a ship in distress. In an emergency at sea, we all know that time is of the essence.

Recognizing that, the International Maritime Organization (IMO) developed the operational concept of a fully automated global system. Utilizing the most advanced satellite technology, ships in any area would now be able to establish communications essential to their safety. To assist IMO in this effort, CCIR (International Radio Consultative Committee), INMARSAT (International Maritime Satellite organization), and the COSPAS/SARSAT partners designed, built, and tested the equipment to be used in the GMDSS (Global Maritime Distress and Safety System), and the ITU (International Telecommunications Union) allocated the necessary frequencies. The result is that search and rescue authorities ashore, as well as shipping in the immediate vicinity of a vessel in distress, can be rapidly alerted to an emergency so they can assist in a coordinated SAR operation with a minimum of delay.

It is well documented that the bulk of time and resources expended in a search and rescue incident occurs during the "search" phase of the scenario. Rescue Coordination Centers have benefited enormously from developments in satellite/ship positioning information. They can now instantly verify the exact location of an emergency and track any subsequent drift resulting from tide, current or wind influences after loss of power or impact. Essentially, the "search" can be taken out of search and rescue.

Having solved the first half of the equation ("I am in distress, I am here!"), the SAR controller can turn his/her attention to the availability of assets to provide assistance ("Now, who is nearby to help?"). One of the primary tools at their disposal, and the system which complements those mentioned above, is the U.S. Coast Guard's Automated Mutual-assistance VEssel Rescue System or AMVER. This computerized ship tracking system can be called upon to produce a "Surface Picture" (or SURPIC) of an area of the ocean. It visually depicts relative positions of ships known to be in the area, against a chart of that segment of the ocean in which the SURPIC was requested.

As AMVER nears its 35th year of service to the world maritime community, a complete revision of its software package represents a quantum leap into the

future, ensuring that AMVER remains the world's premier ship reporting system. Rumors that GMDSS would make AMVER obsolete have proven unfounded. The U.S. Coast Guard has recently constructed a brand new, modern computer facility in Martinsburg, West Virginia to house the AMVER computers. What began in 1958 as a search and rescue tracking tool only for merchant ships in the North Atlantic Ocean, is today the only voluntary ship reporting system that spans all the oceans around the globe. AMVER has scrupulously maintained its pledge that use of a vessel's position information is proprietary, available only to recognized national search and rescue agencies, and then only in a bonafide emergency situation.

In 1990, AMVER plotted 197,559 voyages, maintaining an average of 2,358 vessels on the daily plot. The 12 U.S. Coast Guard Rescue Coordination Centers typically turn to AMVER first in deepwater SAR cases. Other SAR agencies, both U.S. and foreign, obtain SURPIC information upon request to the Coast Guard RCCs. 1,740 SURPICS were provided to SAR agencies in 1990.

The upgraded AMVER software features a graphical interface which now indicates the real-time position of participating AMVER ships. Ship positions can be dead reckoned by computer to a user-specified geographic area, defined by either a radius distance from a given point, or corner boundaries of a geographic area, or the track of a projected sail or flight plan. This new feature will enable AMVER voyage specialists to more accurately and rapidly validate AMVER vessel routes, yielding significant improvements in the quality and certainty of information available in an emergency. Additional capacity will allow future participation by such new categories of ships as cruise ships (with their short multi-port sailing schedules), coastal freighters, fishing vessels, and conceivably even large yachts, all of which provide good additional SAR platforms.

Maximum participation and timely, accurate reporting by the world's merchant fleet is vital to AMVER's effectiveness as a SAR tool. The more ships on plot, the better the chances of emergency assistance being quickly located and dispatched to help. More than 40% of the world's merchant fleet now participates in AMVER. With the recent break-up of the Eastern European Soviet Bloc, the potential exists for an even greater number of volunteers to participate in AMVER, thereby providing even more search assets available to the RCCs.

Note: Additional information on AMVER is available through the AMVER Maritime Relations Office located on Governors Island,

FTS: 664-7762
Comm: (212) 668-7762.

The Search and Rescue Division, COMDT (G-NRS-3) is the Program Manager for AMVER.

STATION STUDY IMPLEMENTATION PROGRESS: SITREP ONE

By: LCDR G. D. Garrett, (G-N-1)

A. SMALL BOAT STATION STAFFING STUDY (SBSSS) 31 JUL 91

B. COMDT 171700Z JAN 92 ALDIST 023/92 COMDTNOTE 5600

1. SITUATION:

A. Over the last 20-30 years, small boat stations have evolved from essentially single mission SAR units to genuinely multi-mission stations. Operational and administrative tasking have been uncontrolled and uncoordinated. The cumulative effect at many units has degraded primary mission effectiveness. Current station staffing standards/force deployment do not adequately reflect todays real operations/training/maintenance/admin workloads, major advances in technology, changing customer needs, or major shifts in customer demographics. Resources are not best aligned with customer needs.

B. The Small Boat Station Staffing Study (SBSSS) completed its final report 31 JUL 91. The report contained 75 specific recommendations addressing personnel, operations, training, maintenance, admin, reserve, auxiliary, and organizational issues. The report was officially accepted 18 NOV 91. COMDT directed that a dedicated implementation team be established to ensure follow-through on report recommendations. The accepted report was distributed to the field during late November.

C. The five member Station Study Implementation Team (G-N-1) began to take shape in DEC 91 and started work in earnest in early JAN.

1) CAPT H. G. KETCHEN
Chief, Implementation Staff 267-0708

2) CDR R. E. TINSMAN
Assistant Chief 267-6710

3) LCDR G. D. GARRETT
Staffing Standards 267-6101 Prototype Unit Program Interim Releveling Issues

4) LT G. R. JOHNSON
Career Path 267-6100 ADMIN Tasking Personnel Maintenance

5) BMCS M. L. GEBERS
Qualification 267-6711 Training 780-5412

6) FAX: (COMM) 202 / (FTS) 267-4418.
E-MAIL: FIRST INITIAL.LAST NAME/G-N-1 OR G-N-1/G-N

D. Implementation underway on all fronts. Progress good. Team acting as advocate for all units facing similar problems. Implementation challenges encountered where expected--mainly in personnel and training areas where stations are competing with other operating units for scarce resources. Highest level interest and support remain very strong.

2. ACTION TAKEN (HIGHLIGHTS):

A. 16 DEC **Implementation team convened.** Met with key program/facility/support/resource managers, leadership of work-life, group, waterways systems, and industrial study groups to coordinate efforts, flesh out solutions, identify alternatives where recommended actions seemed infeasible. Began work on implementation plan.

B. 06 JAN **Implementation plan completed/submitted** for approval. Plan divided recommendations into four implementation categories:

I IMPLEMENT WITH DELIBERATE SPEED. (34 RECOMMENDATIONS)

II PROTOTYPE/EVALUATE. (21 RECOMMENDATIONS)

III MORE DATA REQUIRED. RESEARCH/REVISIT. (16 RECOMMENDATIONS)

IV LONG TERM REVIEW. PENDS EVAL OF OTHER CHANGES. (4 RECOMMENDATIONS)

C. 06 JAN **Initiated efforts on broad front** with concerned HQ staff elements. All work undertaken in context of COMDT's vision/strategic objectives--**People/Balance/Excellence.** Primary efforts focused on major impact Category I items and "short term" implementation points, targeted at fall '91 flag conference.

D. 06 JAN **Began leveling plan work with G-NRS team, under NRS leadership.** Objective: Provide interim relief for workload-resource mismatch pending completion of longer term comprehensive Station/Group staffing standards overhaul.

E. 10 JAN **Established E-Mail bang list** (including district O/OSRs/others) to share SBSSS implementation information. Keep field informed. Keep implementation team informed of field initiatives. Exchange ideas/lessons learned. Monthly progress reports to HQ Operations Coordination Council to be regularly passed to all Flag Officers.

F. 15 JAN **Drafted ALDIST (Ref B) identifying error in latest Directives, Publications, and Reports Index (DPRI);** Providing interim relief from excessive holding requirements. Next DPRI will reflect reduced holdings for stations/small units. Leading effort to strengthen concurrent clearance process, protect "administratively limited" units from inappropriate tasking. Objective: incorporate "protection" in revision to CG Directives System Manual sked for publication early third QTR FY92.

G. 20 JAN **Implementation plan approved.**

H. 21 JAN **Conducted two day admin tasking/MLC Compliance Inspection workshop.** LANT/PAC MLC Inspectors, concerned HQ staff reps, met to review 800+ ADMIN tasks imposed by 10?+ taskers with objective of identifying what can be eliminated, reduced, done more efficiently. Strong consensus achieved to make the compliance inspection program more of a discovery/training effort--an assist team--than a pure compliance effort, and to take greater advantage of inspection teams' perspective to improve the way we do business.

I. 27 JAN **Participated in Ninth District CO/OIC Conference.**

J. 27 JAN **Participated in Fifth District Admin Tasking Workshop.**

K. 1 FEB **Reported to COMDT on short term implementation points status.** Commandant's support, commitment firm.

L. 10 FEB **NRS briefed G-N on draft leveling plan** for stations.

3. OTHER DEVELOPMENTS BY RECOMMENDATION:

A. CATEGORY I

1) Short term implementation points

A) **Strengthen concurrent clearance process. (SEE 2.F)**

B) **Establish boat configuration and inventory control board.** Charter drafted. Board expected to meet this Quarter. First business will include review of current boat management process.

C) **Create command ashore assignment panel.** Current thinking is that a panel may not be appropriate. However OPS ashore experience requirements for the OPS ashore assignment officer billet have been institutionalized. Program manager's role in the assignment process has been strengthened. Intend to define an appropriate/workable OPS ashore career pattern. Incorporate this info in the new Officer Career Handbook, Currently under development by G-PO.

D) **Standardize the OinC review process.** Changes made Fall '92. G-NRS will observe boards this spring to monitor the impact of recently directed changes, make additional recommendations as necessary.

E) **Review/Revise resident training programs.** G-PRF is undertaking a review of CG-wide training during FY92. G-N-1 has started analysis of training requirements and training support for station, building on SBSSS work. N-1 will be working with G-PWP on the just-underway BM rating occupational analysis. An expert will met during the week of 24 FEB to revise MK admin and engineering supervisor courses as part of a follow-on to the MK rating occupational analysis. The curricula for NMLB school courses were extensively revised 1st QTR FY92.

F) **Review compliance inspection program.** (PER 2.H.)

G) **Establish prototype units.** N-1 will advertise basic criteria and solicit district recommendations by end of FEB.

H) **Institutionalize PCO/PXO Ashore course.** The PCO/PXO Ashore course will be offered this year (CLCVN 23 MAR) for prospective Group Commanders/Deputies. Intended to offer the course at least twice per assignment season in future years.

I) **Expand use of STAN teams.** Four new billets for the MLB STAN team are in the FY93 budget request. STAN teams are currently rewriting the UTB and MLB type manuals and working on revisions to the Boat Crew Seamanship Manual. G-NRS is looking at employment strategies that will further increase STAN team efficiency/effectiveness.

J) **Create stronger station voice at HQ.** The forces that brought the SBSSS into being, the SBSSS report, the report's warm reception, and creation of the implementation team have provided station a stronger voice. Future options: a strengthened G-NRS or a new facility division within G-N.

K) **Evaluate expanded use of SARDETs.** Addressed under G-NRS releveling plan.

L) **Test the Norwegian Crewing concept.** 49 FT prototype vessel launched 29 JAN at Munson Marine, Seattle. Final acceptance trials in Virginia during FEB/MAR, prototype operation at Taylor's Island to begin 3RD Quarter FY92.

M) **Reduce Number and variety of small boats.** G-NRS has been working with the Districts on this since NOV 90. Resulting actions so far have eliminated nearly 150 nonstandard boat allowances with another 75 soon to follow. Several initiatives are underway to hold the number/type of nonstandard boats to the minimum necessary.

N) **Review boat readiness requirements.** Addressed under G-NRS releveling effort. Several districts are conducting independent reviews.

O) **Support ongoing initiatives.** There are numerous studies/initiatives underway at the Headquarters/Area/MLC/ District levels and in the field which bear on station issues. The SBSSS Implementation team is making every effort to remain aware of, coordinate with, and take fullest advantage of such efforts.

- G-NRS Leveling Plan: Working with NRS to improve the workload-resource match. Examining expanded use of SARDETs. Exploring feasibility of assigning rated personnel to fill watchstander positions to the maximum extent possible (more petty officers/fewer nonrates); E-2s would be assigned as "apprentices" above watchstander requirements.

2) other category I

A) **Remove nonrates at "A" school from unit roster.** PERSMAN will be revised to standardize this procedure throughout the service. (MAY 92)

B) **Combine operations reports.** An existing R&D project, Operations Information Systems (OIS), may promise a solution. G-N-1 has met with the OIS team on several occasions to address potential improvements in this, command and control, and operations information flow areas.

B. CATEGORY II

A) **Assign MSTs to some stations.** Premise: MSTs can lend rating expertise to stations, enhance multimission capabilities, increase station petty officer depth. Five MST billets available for prototype. Candidate prototype units to have significant MEP/MPS role. District input sought for unit selection.

C. CATEGORY III

A) **Remove non-performers.** Discussions underway.

4. FUTURE PLANS/RECOMMENDATIONS:

A. Continue/encourage dialogue.

B. 11 MAR participate in D7 GRUCOM/OPS Conference.

C. 01 APR BRF COMDT on overall progress.

D. Establish a field expert advisory board.

E. Proceed on all recommendations at best speed.

F. Receive/use Group Study Report.

BT

SARMIS DATA ENTRY SYSTEM (SARMIS/DES)

By: LTJG April Dattke, G-NRS-1

Hello SARMIS Fans!

The long awaited revision of the SAR Data Systems Manual (COMDTINST M5230.10) is now complete. After months of delay here at HQ, it should be at your unit by the time you read this. If not, please contact us at FTS 267-1054. The manual is now entitled the Search and Rescue Management Information Systems (SARMIS) Manual. It incorporates all the changes we have undergone during the nine years since the SAR Data Systems manual was originally issued.

Essentially, the manual is a total rewrite. In it, we have incorporated the SARMIS/DES and SARMIS/DSS instructions, including chapters on system management and troubleshooting. Case reporting requirements have been clarified and helpful appendices added.

As with any computer system, it's the little things that become the most bothersome. Let's talk about some of the errors that manage to slide into the SARMIS/DES system at your unit. These errors cost the district data coordinator countless hours because they must be tracked down and corrected. Some of the most commonly occurring errors are:

ACTUAL SEVERITY SHOULD BE 3 IF PROPERTY WAS LOST - this error pops up when the SARMIS/DES user inputs a 2 as the severity code, meaning "moderate", when in fact the code should have been a 3, meaning "severe", because lives and/or property were actually lost or damaged.

NUMBER OF RESPONSES DETECTED NOT AS SPECIFIED - this error could be caused by a variety of reasons...The SMC is responsible for inputting the correct number of the responding units in the SMC report. Also the SMC should be claiming an additional response for itself.

TIME SPENT SEARCHING MUST NOT EXCEED TIME ON SORTIE - makes sense to me.

TIME OF NOTIFICATION BEFORE SMC - this error occurs when a unit responded before the Coast Guard was "first" notified. It is important that the SMC enter the first time that ANY Coast Guard unit was notified and also the other participating units enter a time that is not earlier than the time the SMC entered. If in doubt, ask the SMC.

These are the most troublesome...If you take a little extra care to get these field correct, your data coordinators' lives would be much easier.

Thanks, from the puzzle palace!

PLEASE NOTE: Beginning in FY-92, the Electronics Engineering Center (EECEN) in Wildwood, New Jersey has assumed responsibility for user support of both SARMIS/DES and SARMIS/DSS products. They will man a hotline from 0700 to 1830 EST and provide an answering machine in the off hours. We are very interested in how well they do with this new tasking and would appreciate any comments.

****

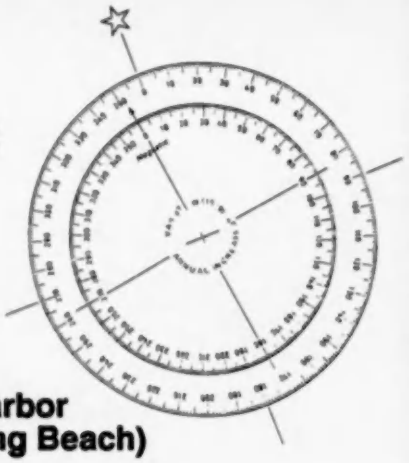
E-Mail: HOTLINE/EECEN

Telephone: (FTS) 346-7324
(609) 523-7324

Fax: (FTS) 346-7329
(609) 523-7329

Written correspondence:
Commanding Officer (ca)
CG Electronics Engineering Center
PO Box 60
Wildwood NJ 08260-0060

STANDARDIZED DF REPORTING



By BMC Marc B. Phillips, Station Channel Islands Harbor (formerly a SAR Controller at Group Los Angeles/Long Beach)

[Editor's note: The following was adapted, with his permission, from an Idea Express suggestion sent in by Chief Phillips. His idea has a lot of merit and needs to be disseminated to the field; it will not be incorporated into our formal telecommunications doctrine because it applies only to the Polaris radio direction finder.]

A vessel reports itself disabled "somewhere between Catalina and the mainland". Talking to the operator for twenty minutes, trying to get some idea of where he is, produced no worthwhile information. DF cuts were obtained from three Coast Guard units, reported as "good", "pretty good", and "decent". All three lines of position were plotted and none of them intersected. The three units who took the cuts were called back to find out just how "good", "pretty good", and "decent" the DF cuts actually were; over the next fifteen to twenty minutes it was determined that the "pretty good" cut was actually the best, the "good" cut was discarded after the watch stander described the characteristics of the Polaris radio DF, and the "decent" cut turned out to have a possible error of thirty to forty degrees. The LOP used, obviously, was the "pretty good" one.

Now imagine this same situation with a vessel that is sinking or on fire. The time that it took to evaluate and reevaluate the DF cuts could have meant the loss of both the boat and the people!

I am sure there are hundreds of similar cases occurring throughout the Coast Guard. Too often a boater reports himself in trouble and has little to no idea of where he is. Even when a boater says he has a good idea of his position, if a Coast Guard unit reports a DF cut that doesn't jibe with what the boater says, which report does the SAR controller give the most weight to? Units reporting the quality of DF cuts are doing the best they can using whatever terminology they've been able to figure out themselves with little to no standardization. However, SAR controllers are always unsure of how much weight to put on a particular DF cut; one person's "good" could be another person's "poor". In order to fix this problem, I propose that the following standardized way of reporting the quality of DF cuts be adopted by the Coast Guard:

"Excellent" cut: *Very good signal strength; clear modulation; Polaris sweep remains locked on to the signal during the transmission; light does not flicker more than one light in either direction; squelch does not have to be turned down (when adjusted normally) to get a better lock on the signal.*

"Good" cut: *Fairly good signal strength; readable modulation; Polaris may search for one sweep; lock on to the signal, sweep once, lock on, etc.; Polaris light may flicker one or two lights in either direction; squelch may have to be adjusted slightly to get a better lock on the signal.*

"Poor" cut: *Scarcely perceptible signal strength; almost no modulation is heard; Polaris may sweep several times, lock on momentarily, sweep several more times, lock on again, etc.; Polaris lights may flicker three or more lights in either direction; squelch has to be turned off to get any locks on the signal at all.*

Descriptions for the terms "very good", "fairly good", and "scarcely perceptible" used above can be found in Communication Instructions Operating Signals, ACP 131(D).

Also remember that if you do not get a cut at all, or hear nothing at all, this information could be very valuable to the SAR controller who is attempting to locate a disoriented vessel. Ensure that **"nothing heard"** is also reported.

PERSON IN THE WATER RECOVERY

By: LCDR M. J. Lewandowski, G-NRS-2

In 1987, the charter fishing boat "Bronx Queen" sank near Ambrose Channel on its way into New York Harbor. In 1989, a USAir flight ran off the runway at New York's La Guardia Airport in an aborted take-off attempt. Every day, numerous passenger ferries, dinner cruise vessels, and large cruise ships ply the waters of our major (and some not so major) ports. Boston, New York, Philadelphia, Washington DC, New Orleans, Los Angeles and San Fransisco are just some of the areas where a major airport is adjacent to or very near the water. An important consideration for operational commanders must be "how to deal with relatively large numbers of persons in the water after an incident?"

After the "Bronx Queen" incident, the National Transportation Safety Board (NTSB) recommended that the Coast Guard look into its capabilities to retrieve people from the water. Though the well deck on the 44' MLB is relatively close to the water, think of the height of the well deck bulwark and gunwales on the 41' UTB. How easy would it be to recover a large amount of incapacitated people from the water with a 65' WYTL? A helicopter can only hoist so many people at a time. This article will describe some of the efforts to date in trying to address this problem.

In October 1991, GRU New York conducted a test of a device called the "LifeRamp" (figure (1)). This device is a relatively lightweight, inflatable, 30' x 3', neoprene-coated ripstop-nylon "platform" which allows people to walk on the surface of the water. Originally designed for ice-rescue, the device appeared to offer a method of allowing PIW to rapidly get out of the water and get aboard a vessel. The device was thought to be somewhat difficult to maneuver by a UTB, particularly in the mild breeze, but the device did allow for very easy entry into the ramp from water, adequate "kneeling" stability with almost 20 people in it, and adequate lifeline arrangement. It also had a high visibility color.

Figure 1: LifeRamp

Two major benefits were readily apparent:

(1) having something physically separating the "victims" from the water (the floor of the device) would probably play a major role in lessening the PIW anxiety level.

(2) it's 10 thousand times easier to help people climb aboard a UTB when they're standing "on" the surface of the water than when they're floating in the water.

The first benefit can easily be overlooked in its importance. Reducing the panic level in any method possible will definitely make a rescue or retrieval much easier.

Other good points of the LifeRamp were its light weight and flexibility (so if a PIW were bumped by the device, it wouldn't hurt). These same points had an adverse effect, though. Without any ballast, the device easily "accordioned" and was very susceptible to being blown around by the wind. At one point, the device became "plastered" up against the UTB hull.

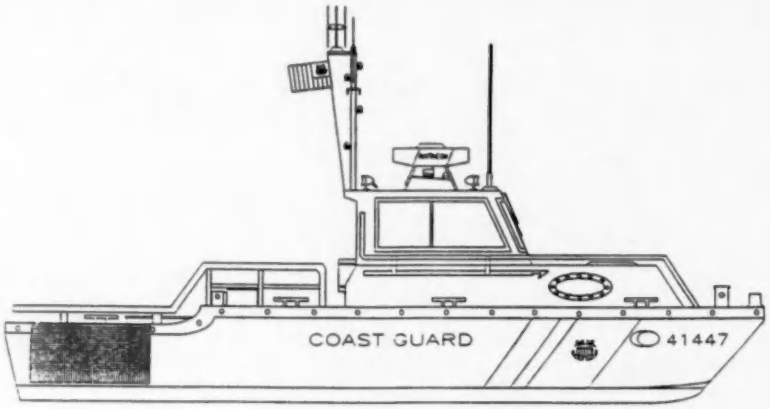


Figure 2: Placement of removable and hinged well deck door

The Search and Rescue Division (G-NRS) and the UTB Systems Center (UTBSC) had representatives at this test evaluation. During that visit, we noted how one of Station New York's nonstandard boats (a 38' Munson) had a removable bulwark in the well deck aft. Though this feature makes for easy handling of pollution containment equipment, it also allows a close-to-the-water access for PIW recovery. We discussed whether a bulwark cutout would be appropriate for a UTB, along with other potential ideas. UTBSC was asked to further investigate PIW recovery methods. G-NRS also looked at many different, off-the-shelf items.

Recently, UTBSC came back with a recommendation that they prototype a removable, UTB well-deck door. This configuration is shown in figure 2 and 2a. This idea has been forwarded for engineering review and analysis. After this review, a decision will be made whether or not to prototype it. Another idea from the UTBSC staff was to have a hinged well deck door (same size and location as the removable door).

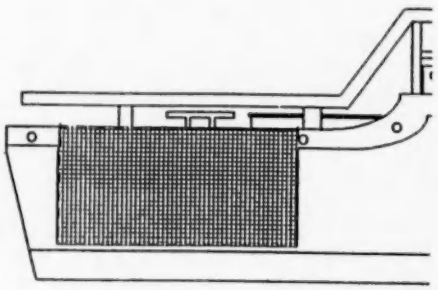


Figure 2a

Additional ideas included a stern "swim platform" arrangement and an embarkation net suspended from the hand rails (figures 3 & 4). Ideas from the field include a small ladder hung from the stern cleat (figure 5) and use of a device called a "Personnel Retrieval Strap".

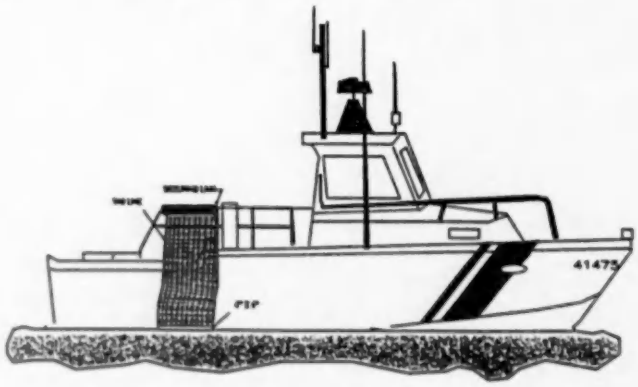


Figure 3: Debarkation Net

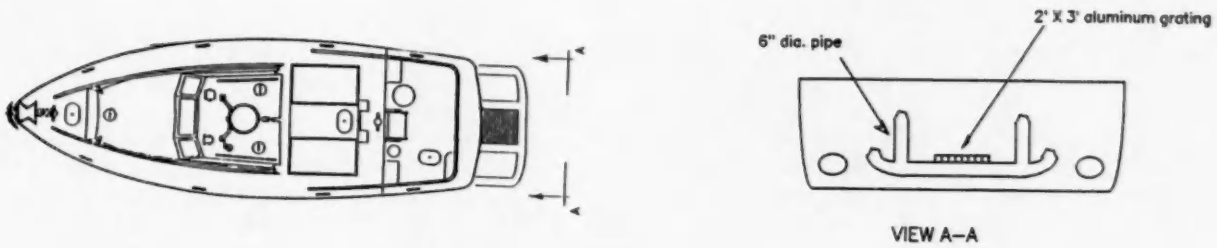


Figure 4: Swim platform

Let's go back for a minute. We've been talking about getting people aboard. Let's look at getting people out of the water. As stated above, something to physically separate the "victims" from the water would probably lessen PIW anxiety (yours, too?), and it's easier to help people climb aboard when they're "on" the surface than when they're floating "in" the water. There are additional "off–the–shelf" devices available.

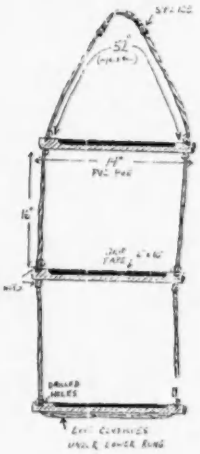


Figure 5: Boarding Ladder

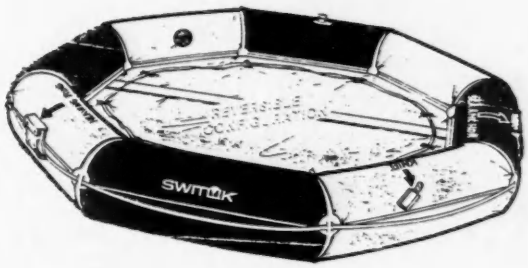


Figure 6: Rescue Platform

The 10 person "Rescue Platform" (figure 6) has been tested by the Los Angeles, New York, and Boston airport emergency disaster teams. This device is a single–tube, low freeboard device. They were found to be acceptable for getting a large number of people out of the water prior to being rescued. This is the most critical part for a successful rescue because water conducts heat about 25 times faster than air.

A MK–20, 20 person liferaft (figure 7) should perform as well as the "Rescue Platform." The major drawback to the MK–20 is the high freeboard (double–tube vice single–tube). The PIW have to enter it by using one of the two boarding ramps.

To effectively rescue a large number of victims such as in a major airline or ferry accident, you may have to deploy 10–20 of these platforms in various locations prior to picking up any individual survivors. Situational awareness and common sense must prevail. If the relatively light, un–ballasted devices are scattered downwind of the PIW, they'd probably drift faster than the PIW could swim. If the devices get air–deployed, the helicopter rotor wash will definitely blow the devices around. Think about these things before you throw them in the water.

Though we haven't solved the problem of getting the survivors aboard the rescue vessel, we are still working at it. One idea being developed has promise. As envisioned, the idea involves a pneumatic, almost-rigid device, made of high-tech material with "steps" and hand-grabs. This "stairway-to-heaven" won't necessarily allow PIW to walk on water, but it will allow them to easily get from the water to the rail of a rescue craft.

This idea of being able to rescue large numbers is not without cost; the devices start in price from $1500. Since it doesn't appear that we will be purchasing large quantities of these devices in the near future, see what's available in your area. The major ports, airports, etc. may have a quantity of these devices on hand. It's up to you to know if they do have them and where they are. In an emergency, though, remember your own life raft(s) or flotation gear. To a PIW, something is better than nothing.

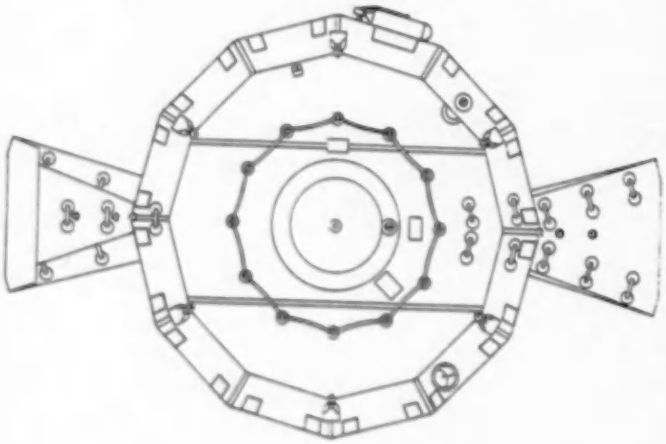


Figure 7: Rescue Platform

Before we close, crewmembers should be reminded of the dangers of allowing survivors or potential victims to enter cold water in cases where it is not absolutely essential. If the choice is, do we scratch, ding, dent the paint and the boat or do we allow a victim to enter 40° water even in a life vest, get ready to paint and repair the boat. There should be **VERY FEW** cases in which a rescue requires a victim or rescuer to enter the water.

One important point, we have mentioned recovery methods where PIW themselves can play a major part in their retrieval. We know that the problem is much larger with incapacitated PIW. We'd like **YOUR** input on this subject. If anyone out there has any other ideas on this topic, please forward them to G-NRS-2. We'll mention them in a future ON SCENE.

NOTE: *None of the above remarks, nor mention of the specific brand names above are to be taken as any positive or negative endorsement of any products mentioned. None of the above remarks are to be construed as a formal evaluation of any product.*

If anyone is interested in further information on any of the devices mentioned, the following addresses are provided:

LIFERAMP -
Innovative Safety Systems
16 Atlantic St., Lynn, MA 01902

PERSONNEL RETRIEVAL STRAP -
Lifesaving Systems Corp.
720 4th Street S.W., Ruskin FL 33570

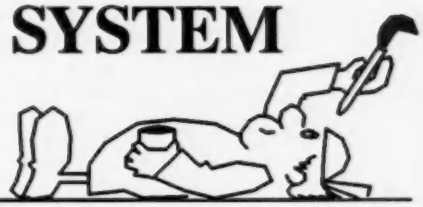
RESCUE PLATFORM -
Switlik Parachute Company, Inc.
P. O. Box 1328,
1325 East State Street, Trenton NJ 08607

MK-20 - Federal Supply System:
NSN 4220-01-011-7478

LCDR Lewandowski wants to pass additional thanks to: BM3 James Antonelli, the staff of UTBSC, GRU NY, STA NY, & MarkO. ⚓

41' UTB FIBERGLASS CABIN COATING SYSTEM

BY: LT WES DRIVER, G-NRS-2



Several requests to paint 41' UTB cabin tops with polyurethane paint have been received and disapproved. The issue was discussed with the Naval Engineering Fleet Systems Branch. While the performance of polyurethane paint is well known, there are shortcomings which outweigh any positive results. Some of these are:

a) **Safety:** Currently, all Coast Guard personnel who are authorized to use polyurethane paint are specially trained and equipped for its safe application. Yet, every year approximately three Coast Guard personnel are treated for respiratory distress after using a polyurethane paint. Lung damage caused by this paint is often permanent.

b) **Appearance:** The cabin top and hull should be painted with the same paint so they weather the same. Two different paints would give an odd appearance. Repairs are extremely difficult to blend into polyurethane painted surfaces.

c) **Cost:** Since polyurethane paint shows all imperfections, multiple coats of special primers and wet sanding between coats are required before applying the finish coat. $2,000 an application is not cheap. The UTB cabin top can be painted with silicone alkyd for less than $70. Repairs on polyurethane paint are much more expensive than on silicone alkyd paint.

d) **Performance:** In spite of its toughness, polyurethane paint is damaged during use. Sailboats with this paint receive enough wear and tear during weekend use to require annual painting. UTB's obviously receive much greater use.

We appreciate the interest in trying to improve the maintenance procedures for UTBs. However, the use of polyurethane paint is not authorized for Coast Guard small boats.

THE NEW NATIONAL MOTOR LIFEBOAT SCHOOL CURRICULUM

By: CWO Marshall Wills, Chief NMLBS

The training needs of the Coast Guard are continually changing. This past year at the National Motor Lifeboat School the staff conducted several internal and external surveys to determine if our curriculum met these changing needs. Our findings indicated several facts:

- The field was unable to provide us with 84 students a year who met the course prerequisites for the Heavy Weather Class.
- Some students did not possess adequate basic boat handling skills to be able to perform at the level of the curriculum.
- The curriculum contained some tasks which a coxswain / supervisor does not normally perform on the job.
- The curriculum contained some tasks which were prerequisite knowledge and skills.
- The instructor / student ratio of 1:4 allowed a limited amount of wheel time for the student to actually practice the tasks, (About 8 hours out of 50 hours underway).

****

Commandant (G-NRS-2) approved several major changes to our courses to help us provide better training and ensure the best qualified candidates attend the school. Some of these changes are:

- Reduce the number of students to the Heavy Weather Class to 54 a year.
- Reduce the number of tasks in the curriculum. Accomplish this by eliminating those tasks which do not apply on the job, or are prerequisite knowledge and skills.
- Change the instructor/student ratio for the coxswain classes to 1:3, this will allow about 12 hours of wheel time per student to practice the tasks.
- Develop a Basic Operators Course to teach MLB specific skills to 54 students a year. (12 quotas belong to G-RST).
- Review the MLB Heavy Weather Supervisors Course to ensure the curriculum matches the job performance.

****

Let us look at the objectives of the three courses, how they differ, what kind of students we are looking for, and how students need to prepare themselves for training.

MLB BASIC OPERATOR COURSE

This course is designed for Boatswain's Mates who are striving to become Coxswain qualified. This is not an entry level coxswain course which starts with the basics of boat handling. The curriculum is designed for the school to put the "finishing touches" on a coxswain trainee by supplementing the unit training program with two weeks of intensive hands on training in MLB specific skills. This includes risk assessment, engineering casualty control, piloting, electronics, towing, surf ops, and rescue and assistance. The underway tasks will be performed in seas of 6 foot or less.

The prerequisites for this course are:

- Permanently assigned to a MLB unit.
- MLB crewman certified.
- Boatswain Mates E4-E9 regular or reserve.
- Completed divisions I, II, III of the Coxswain Qualification Guide.
- Have 12 months TIS remaining on course convening date.
- Pass a prerequisite knowledge and skills examination.

MLB HEAVY WEATHER COXSWAIN COURSE

This course is designed for Boatswain's mates who are coxswain certified. This is an advanced course of instruction which teaches risk assessment, engineering casualty control, and towing and surf operations in 08-10ft seas. The curriculum is derived from the Surfman qualification guide and the student must be able to perform at the level of the Coxswain qualification guide when the course convenes.

The prerequisites for this course are:

- Permanently assigned to a MLB unit.
- MLB coxswain certified for the six months prior to course convening date.
- Boatswain Mates E4-E9 on active duty.
- Have 12 months TIS remaining on course convening date.
- Pass a comprehensive prerequisite knowledge and skills examination based on the MLB operators handbook and the Coxswain qualification guide.

STUDENT PREPARATION

Students will be notified 45 days prior to the class convening date that they have been selected for the course. 30 days prior to the class convening students will receive a study guide with a copy of the entrance exam.

In order to successfully complete the course students must posses certain skills and knowledge upon their arrival. Use these 45 days to practice the prerequisite tasks from the Coxswain Qualification Guide and to study the required knowledge factors.

Past experience has shown that when students arrive unprepared for the course, one or more of the following factors has been the cause:

- You are at a unit which hauls its MLB out of the water for the winter, or your MLB has been in annual availability. You attend the course after having no operational MLB experience for several months.
- You receive orders to MLB school while you are at another Class C school. (You attend two Class C schools back to back.)
- You have been on medical hold for several months.

After several months of not having a boat to practice with, your skill level will be low and you will not be prepared for the course. It would be much better to attend when you have the 45 days to hone your knowledge and skills. The better prepared you are when you arrive, the more you will get out of the course.

SUPERVISORS COURSE

This course is designed for personnel who are or will be required to perform "Ready for Ops" inspections, including the MLB material inspections. The curriculum includes procedures in evaluating MLB operating procedures, structural integrity, and engineering maintenance systems IAW the "Ready for Ops" manual, COMDTINST M16114.16.

The prerequisites for the course are:

- Be a CO, XO, OinC, or XPO.
- Or, be a designated "Ready for Ops" Inspector E-6 or above.
- Be on active duty.
- Have 12 months TIS remaining on course convening date.

UNCLASSIFIED

SECRETS

For a High Performing RCC

By: Dan Lemon, (G-NRS-3)

Those who work in our Operations Centers can usually be proud of their SAR planning and coordination. Ask any SAR organization in the world who handles SAR mission coordination best, and credit most often goes to the U.S. Coast Guard!

Some other nations also routinely conduct Rescue Coordination Center (RCC) functions superbly...but many miss the mark. What are the secrets of true high performance? Some of our colleagues shared views on this recently; they felt that high RCC performance results from:

(1) Elimination of complex procedures that result in bureaucratic delay in SAR response;
(2) Authority at the RCC level to make and execute operational decisions, like launching resources;
(3) Real commitment to implementing an effective SAR Plan, not just putting one on paper;
(4) Genuine desire and readiness to help, with a very high value placed on human life;
(5) Willingness to work sacrificially to meet challenges;
(6) Realization that, besides saving lives, SAR services improve safety, which reduces property loss, and promotes growth in maritime and aeronautical industries, recreation, tourism, etc.;
(7) Assuming distress situations are severe until known otherwise;
(8) Execution of missions in a consistent, unbiased, and professional manner;
(9) Implementation of processes for continual improvement;
(10) Acceptance of responsibility to act;
(11) Breakdown of communication barriers that tend to result from chains-of-command, national interests, etc.;
(12) Use and sharing of all available resources;
(13) Good interviewing skills;
(14) Outstanding awareness of dangers, people, habits, and resources within the RCC's own and neighboring SAR regions;
(15) Sound training, resourcefulness, adaptability, flexibility and sensitivity;
(16) Establishment of joint aeronautical-maritime RCCs; and
(17) Prior staff operational experience, e.g., as patrol boat commanders.

Any food for thought to add to that above? The Editor would like to hear from you.

UNCLASSIFIED

THE RED SIDE DOWN DEPARTMENT

By: LCDR Michael Monteith, G-NRS-2

Lots of things go unnoticed in Headquarters; but MLB rollovers are never taken for granted here. Usually, the first word comes in from one of our field informants; "Did you hear that Station... rolled a forty-four this morning?" Mishap and Casualty Reports may not get here for weeks, but operational gossip travels at flank speed. After getting the first word we then cast around for details, as everyone up and down the command chain, including the Commandant, will want to know what happened.

From our perspective we have slightly different concerns than those of the stations, groups, and districts. Of course, our first question is always whether anyone was injured. After that we try to determine:

(1) Did the MLB right itself as advertised?

(2) Was the damage consistent with other similar mishaps?

(3) Was all the crew wearing appropriate protective clothing and safety gear including helmets, belts, signalling/pyro vests?

(4) Did any personal protective clothing or safety equipment fail?

(5) Did did the coxswain and crew follow the right damage control procedures after the rollover?

(6) What was the experience of the coxswain?

(7) What were the sea state and wave dynamics?

With these questions answered we can go up the command chain with the news, good or bad.

To be honest, we are really not concerned with whether the coxswain was cutting "monkeyshines" in the surf, was hit by the infamous * "rogue" wave, or simply, made a mistake. The group commander can figure that out. We are more interested in trends that might be evident across several such rollovers.

Our records of 44' MLB rollovers are sketchy. We have some formal and loads of anecdotal documentation on about 25 rollovers over the last 15 years. We know that there were more. For the sake of this discussion, let's consider the most recent five MLB rollovers during the last two years.

Geographic Area / Rollovers - one on the East Coast; four on the West Coast. The Atlantic rollover was actually encouraging to us as it offered hope that at least one East Coast unit was training in white knuckle conditions. A recurring problem that our MLB Standardization Team has documented is that our many of our East Coast 44 MLB crews do not adequately train for heavy weather.

MLB Survivability - Five more times we have demonstrated that properly maintained MLBs, in the hands of well trained crews, will survive a rollover with engines running, continue on to get the job done if necessary, and make it home again. Damages from the last five mishaps ranged from none (water in engine compartment only) to extensive (crushed turtles and top). In each case the boats made it home under their own power.

Protective Clothing and Safety Equipment - In each rollover our crews were wearing protective and

safety gear as prescribed in the Survival Systems Manual and it all worked. We have noted that:

•Helmets will come off unless they are buckled under the chin.
•Antiexposure coveralls work better if all closures are cinched tight and they are zipped up.
•Dry suits work.

We have noted one case in which a crewman slipped out of his safety belt though it remained securely buckled. Remember, keep it low and snug. Though this is only one reported case, we are modifying new heavy weather belts by placing neoprene rubber on the inside. This, we think, may help keep the smooth belt fabric from sliding down off the hips, especially when worn against the similar smooth fabric on dry suits.

Crew Response – In each of the last five rollovers the boat crews did the right things after the mishap. Following prescribed procedures ensures the continued safety of the crew as well as limits further damage to the boat and its various systems.

Recurring Problems – We note the following common trend in the most recent five rollovers:

Broken Coxswain Chair – In three of the five rollovers the helm seat sheared off and rolled adrift about the coxswain flat, threatening everything in its way. In one case the coxswain was still belted in it! In the other two cases the coxswain had belted into the console. In each case the chair sheared at different location on the pedestal or base. You bet this is a concern to us and we are looking into it.

Towing Screen Breaks – In one case the towing screen was broken completely from its deck and overhead fastenings and remained on the MLB tethered only by the crewmen belted to it. Fortunately, the crewmen were also clipped to the outboard "D" rings on the coxswain flat so they remained onboard. In two other cases the towing screen snapped only at one end. The preliminary lesson here seems to be avoid clipping solely to the towing screen.

Mast Breakaways – In two cases the mast sheared at the base as it is designed to do after a probable lick on the bottom. However, in both cases the stick continued to flail on deck after the re-right, held on by the wiring harness. In one case a crewman made it uninjured through the capsize only to be clobbered (requiring minor hospital treatment) by the bouncing mast. We are considering a BOATALT for weaklink breakaway electrical connectors to prevent this in the future.

Personnel Overboard – The most recent five rollovers did not result in losing crewmen over the side. However, in two incidences, crewmen were left suspended over the side of the boat by their heavy weather belts.

Despite these concerns, the trends we see are positive. While we never consider rolling a 44' MLB as the "price of doing business," we all know that 44' MLBs will continue to go bottoms up in the future.

First, we are encouraged because in four of the last five rollovers the unit OinC or CO was actively involved in the training. Just getting some OinCs and COs away from their desks can be a significant emotional event. Learning not to turn the boat over

can come later. Also, in each case the MLB was engaged in training with a senior surfman. (We're still trying to decide if this is good news.)

Further, from other MLB rollovers we know that the boats have not always come up as advertised. In many previous cases we have had engines stall or worse, ripped from their foundations. Only recently have our crews come up all wearing the right stuff.

From these last five rollovers we get some good indicators that our unrelenting emphasis on boat crew qualification, training, maintenance, and standards compliance are effective. For example, during the last three years our MLB Standardization Team has found, and helped to correct, over 200 loose engine mounts and over 200 engines that would not idle properly. They have also found numerous tools boxes unsecured on the deck and dozens of watertight doors that weren't.

Were any of these discrepancies found and corrected on the any of the last five 44 MLBs to roll? Probably. We haven't bothered to look. So our point is that five more MLB crews who followed established practices for qualification, training, maintenance, and safety were rewarded with a chance to tell another sea story. That's always good news.

Meanwhile, keep the red side down.

** Editor's Note: A rogue wave is the one that rolls the boat while all the other waves are surprisingly within training limits.*

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SURF OPERATIONS

By: BM1 Tim Murdoch, NMLBS INSTRUCTOR

Operating Motor Lifeboats in surf conditions is a complex and demanding task. Great skill is required from the entire boat crew, especially the coxswain, to transit a surf zone safely. The National Motor Lifeboat School cannot make you a surfman. That process requires years of training; however, we give you a good base to build on. After the coxswain graduates, it is up to them to sharpen those skills.

The foremost objective in surf operations is the safety of your crew and vessel, and the completion of the mission. Transiting a surf zone is a dangerous evolution. The fewer breaks you take the better your odds, so wave avoidance is the key. Another important point is to get in, get the job done, and get out as quickly as possible. As with wave avoidance, the less time you spend in the surf zone, the better your odds.

MLB School teaches five basic surf objectives – transiting a surf zone beam to, station keeping, outbound (transiting out a bar with surf on your bow), inbound (transiting from seaward with surf on your stern), and personnel pickups.

Before the student gets any wheel time in the surf, the instructor takes them in for a few hours of "surf intro". During this period, the instructor drives and points out different types of waves, certain waves to avoid, windows, and lulls. These are all new terms to most of our students. The instructor also demonstrates wave avoidance techniques covering all the objectives, with the exception of personnel pickups.

After a surf introduction section, we move back to the classroom. An instructor teaches students the objectives of operating in the surf safely. He explains all the terms used, including windows, lulls, closeouts, sluffs, and curls. He thoroughly explains breaker formation and how each type of breaker affects the boat. Utilizing photographs and videotape, he explains how to safely transit a surf zone.

videotape, he explains how to safely transit a surf zone.

The first day of surf for the student is spent running beam to and station keeping. Once again, the instructor first demonstrates the proper technique, then each student gets a turn at the wheel. While one student is driving, the other students act as lookouts, watching for breaking waves and to help the coxswain maintain course using terrestrial ranges. The most difficult aspect of beam–to and station keeping is working with the ebb current. At times, the ebb current runs at speeds in excess of six knots on the Columbia River. Combined with breaking surf, this makes running a straight track and station keeping very challenging. The student at the helm receives continuous information from the other students onboard to maintain a trackline.

Once the student can effectively work laterally and station keep in the surf, we move to working outbound and inbound. Working outbound is essentially working out across a breaking bar or inlet. During this drill the student is taught how to control boat speed when meeting a breaking wave. This serves two purposes. Too much speed and the boat launches off the breaker, which could result in injury to crewmembers or damage to the boat. Too little speed and there is a risk of capsizing the boat. Students are also taught wave avoidance, which is maneuvering the boat around breaking waves. The objective of this drill is teach the student how to safely work across a bar, by avoiding as many breakers as possible. The student learns to "read" the breaks covering the entire bar in order to select the best track for the crossing. It is an exercise in throttle and helm control, as well as crew communication.

While working inbound through a surf zone, the student is taught how to run stern to the breaks in order to position the boat down swell for an approach on a vessel or person in the water. This maneuver places the MLB in the most dangerous position therefore students must be constantly aware of the boats position in relationship to the breaking surf. The student driving the boat receives constant feedback from the instructor and the other students on the boat. Once again wave avoidance and timing is stressed. It takes teamwork and crew coordination to keep the MLB in a window or lull to successfully conduct a safe inbound run.

During the personnel pickup drill, students must combine all of the skills learned in preceding drills into one evolution. The drill is designed to simulate a person in the water inside a surf zone. "Oscar" is put over and the student maneuvers the MLB approximately 200 yards to seaward, simulating a person in the water inside a surf zone. At this point, the drill begins. They make an inbound run to get down swell from "Oscar" to set up for the approach. Students must station keep a safe distance down swell waiting for a "lull" in which to make the approach. The recovery is most easily accomplished in a "lull". After "Oscar" is recovered, the MLB must be safely maneuvered to exit the surf zone. They must remain alert to the conditions in order to accomplish the drill without endangering the crew.

After spending two weeks at the school, students have a good grasp of the basic skills needed to safely operate a motor lifeboat in heavy weather. To master these skills, the student must get underway frequently and practice. Timing is critical in nearly every evolution involving surf and heavy weather and timing is perfected with practice. The person who drives the boat the most, drives the boat the best.

BUILD A BETTER STATION

By: PA2 Bryan Bender

Editors Note: Most of you are aware of the Station Staffing Study, its results, and progress(see Article on page 30 of this issue). This article, though dated, is reprinted from the District 11 BAYEXPRESS.

The most dramatic day-to-day contact the Coast Guard has with the public is the small-boat station. Stations become intertwined with their neighborhood community, like the fire or police department. Keeping in mind that a community's impression of its station's professionalism directly impacts the entire service, Headquarters assembled a Quality Action Team in FY 1991 to identify problems and recommend ways to improve stations. Recommendations from the study will sharpen the professionalism that the Coast Guard's Multi-Mission focus has blurred.

This seven-member team set out to determine what stations are doing, what they should be doing and how to resolve the difference between the two. Their findings, "In Pursuit of Excellence: Building a Better Station" were published in July, 1991.

The team, based on the tenets of Total Quality Management, sought their answers from those on the front-line, the stations and groups. Fifty-six stations (37-percent of all stations) and their groups were visited, surveyed, prodded and poked. "It's uncomfortable," said BMCS Richard Dixon, Officer-in-Charge of Station Golden Gate. "We have to operate under unique situations, so you tend to hold back information on how it does work." Dixon and his crew were one of the surveyed stations. Other stations from the 11th District included Channel Islands Harbor, San Diego and Rio Vista.

The study then chose Dixon, a 25-year veteran awarded the Coast Guard Medal twice for heroism, as part of a "Reality Check" team, designed by the study to scrutinize the recommendations with four other station COs/OinCs. The team approached the stations as businesses serving customers. As such, they found stations serving the primary customer (the boater in distress, the public) 24-percent of the time and serving the internal customer (paperwork and reports for the rest of the Coast Guard) 76-percent of the time.

SYMPTOMS OF A DISEASE !

If you approach a group of people and ask for a list of problems, human nature dictates a long list. The team found this to be true at the stations they sampled, but focused on the list as symptoms pointing to a disease. Once diagnosed, the disease was two-fold.

*** The training and assignment procedures insures a steady flow of untrained, unqualified people. Station boat crew billets are designed to be 100-percent filled by qualified people all the time. Current staffing practices do not allow for people "in-training," yet 50-percent of the surveyed stations said 40-percent or more of their incoming people were untrained for the position they were to fill. In the case of coxswains, training can consume up to a year. Other**

staffing standards are based on a 68-hour workweek and a 1-in-4 duty rotation. Currently the average workweek is 84-hours and 62.5-percent of stations stand port-and-starboard.

*** Stations have too many bosses. An uncontrolled and uncoordinated tasking process overwhelms stations with wide-ranging, non-traditional and non-operational duties. The study found the stations could receive directives from over 100 elements of the Coast Guard. This "administrative and tasking creep" has forced the senior, more experienced people to their desks and away from their specialty -- boats. Training has fallen to younger less experienced hands.**

IS THERE A CURE?

The study admits to arriving at many conclusions that duplicate findings from other studies. What isn't always in past studies, according to the study leader, CDR Richard Tinsman, is documentation of the existing conditions.

"There is an intuitive sense from a lot of people on what our problems are and what needs to be done about them," said Tinsman. "We quantified where our people are spending their time, what they're doing and what qualification levels they have."

Tinsman said data that supports a known problem provides more ammunition to the solutions.

"When you have a study that is based on data, it becomes less arguable about whether it should, or can be done and what needs to be done, he said.

Involvement by the Coast Guard's top leadership will also differentiate from past efforts. "What's added to the Coast Guard system is a Commandant who's very convinced that he can make changes for our stations, and he needs to make changes for our stations," Tinsman said.

The recommendations are based around four principles: training, tasking, staffing and organization. Key to making the changes, the Coast Guard system must:

--Provide more intensive prearrival-resident training and more aggressive unit training to insure that station billets are filled with qualified crews.

--Cut administrative tasking to stations, thus allowing station personnel time to perform their main jobs: training and supervision.

--Give stations a stronger voice in the system and recognize the limitations of a station.

--Look for new ways to provide services to customers while cutting overhead and reprogramming billets to where they are most needed.

In all, the team arrived at 75 recommendations, including an implementation plan.

GETTING QUALIFIED PEOPLE

The billet design assumes that anyone assigned to small-boats is already qualified, yet the transfer alone disqualifies everyone. A 15-year coxswain or engineer must spend up to three months learning the new area, and be as familiar with it as the local fisherman. The study found that 75-percent of training courses available were not taken. Commands are reluctant to lose even unqualified people for any period of time. Instituting a pre-arrival training requirement results in a core of required courses before assignment to a station. The study also recommends holding transfers until a qualified replacement is in place and creating five-year tours, stabilizing the current shortfall and providing a significant savings in permanent move expenses.

CUTTING PAPERWORK

Considering the rates assigned to small boat stations, 68-percent of station leaders said a storekeeper or yeoman was needed for administrative support. An operational unit requesting more support billets was the most glaring indicator that paperwork must be cut. In surveying the top three people at stations, the OinC, the executive petty officer and the engineering petty officer, found each of them spending an average of 37.33 hours per week on administration alone. This doesn't include the paperwork delegated to other crew members. One-quarter of the administration time was spent on financial matters.

Station commands recognize, however, that they want to keep some of the load. It empowers them to take care of their people and their problems. The study seeks more balance by eliminating unnecessary admin, transferring the burden to more appropriate levels, streamlining and clarifying the chain of command and the tasking received. The OIC and

XPO must be leading cowswains because their experience is critical to the professionalism and safety of the crews and boats. A 70/30 mix for OICs and a 60/40 mix for XPOs and EPOs, the higher percentage being administration, was suggested.

As a whole, the study refused to use adding more people to stations as a recommendation. They did, however, find administration ratings at stations justified. More than 30 finance and supply man-hours and 25 man-hours for personnel were documented. The study recommended greater use of reserve YN/SK support as well as providing active-duty administration billets for 20-person or more stations and greater employment of Auxiliarists in non-traditional roles.

Stations already using the new I.M.P.A.C. Visa credit card for purchases already show significant gains such as: no vendor complaints, discounts for using the card, 50-percent reduction in the need for Blanket Purchase Agreements and more vendors willing to do business. Instituting the use of the card Coast Guard-wide should reduce financial administration at the stations. The study also suggests the elimination of quarterly carryover limits.

NEW WAY OF DOING BUSINESS

Many of the recommendations pose a system-wide change in order to be effective. The most radical changes are targeted for a test program first, in order to judge its effectiveness. Group San Francisco was suggested as one of the test locations.

Finding new ways of doing business will be the primary goal of the prototype unit program. Two ideas that could change the face of small-boat stations forever are the Norwegian crewing concept and SAR Detachments.

With the Norwegian crewing concept, two crews rotate in a specially-designed boat on port-and-starboard duty. The boats would have berthing and a galley. Unit administration would be handled by the Group command. This concept could fill the responsibilities of a full station, but fit in the gaps, providing a continued "presence" and possibly augment full station capabilities. This concept is expected to be put to the test at Taylor's Island, Maryland by the summer of 1992.

Expanding SAR Detachments by combining stations in areas with a seasonal caseload could result in the freeing of 50-100 billets for reprogramming to meet other station's workload shortfalls.

FINAL IMPRESSIONS

Dixon, initially skeptical, returned from the "Reality Check" enthused.

"As the study went along," he said, "I gained more confidence in it, but was holding back any hurrahs. Even at the "Reality Check," we saw a lot of the same things as before. But during the few days we were there, we got to see a lot -- that the study was going to work. Then my interest went sky-high."

Based on the study results, headquarters created a special staff to implement the recommendations over the next two years.

Quality service is a mark of professionalism. As a Coast Guard small-boat professional, quality service means reviving a small child after pulling him from 45-degree water, stopping an intoxicated boater and bringing home survivors aboard a motor lifeboat. The Station Staffing Study not only illustrates our problems of today but shows us where our successes can be tomorrow.

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